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I. Introduction

1. The importance of oceans and seas was once again highlighted by the international community this year, one year after the International Year of the Ocean was celebrated. In this context, it was reiterated that "the United Nations Convention on the Law of the Sea (UNCLOS) sets out the overall legal framework within which all activities in this field must be considered".[1]

2. Following the entry into force of the United Nations Convention on the Law of the Sea (hereinafter referred to as "UNCLOS" or "the Convention") and the establishment of the new "treaty system of ocean institutions", the General Assembly not only emphasized the principle enunciated in the preamble that "the problems of ocean space are closely interrelated and need to be considered as a whole", but also pointed to the strategic importance of UNCLOS as a framework for national, regional and global action in the marine sector.

3. The overall framework provided by UNCLOS for action in the marine sector combined with the imperative of considering ocean issues "as a whole" point to the importance of monitoring and reviewing, in an integrated manner, developments pertaining to the implementation of UNCLOS as well as other developments relating to ocean affairs and the law of the sea. Moreover, the General Assembly, as the global institution having the competence to do so, decided to undertake an annual review and evaluation of the implementation of UNCLOS and other developments relating to ocean affairs and the law of the sea (General Assembly resolution 49/28, preamble and para.12). In this connection, the Assembly requests the Secretary-General to prepare annually a comprehensive report under the agenda item entitled "Oceans and the law of the sea". The present report has been prepared in response to the request of the General Assembly contained in resolution 53/32 of 24 November 1998.

4. The annual report on "Oceans and the law of the sea" is the only comprehensive and multidisciplinary United Nations document presenting to the General Assembly an overview of all aspects of marine affairs integrating legal, economic, social and environmental issues. It has always been the result of a two-pronged approach: organizations of the United Nations system provided inputs in their respective areas of competence; those inputs were combined with the findings from the monitoring activities of the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs, the organizational unit in the Secretariat which assists the Secretary-General in fulfilling the responsibilities entrusted to him in the field of ocean affairs and the law of the sea.

5. At its nineteenth special session, in June 1997, the General Assembly endorsed the recommendations of the Commission on Sustainable Development (CSD) (contained in its decision 4/15 of 3 May 1997) that there should be a "periodic intergovernmental review by the Commission of all aspects of the marine environment and its related issues as described in Agenda 21, and for which the overall legal framework is provided by the United Nations Convention on the Law of the Sea" (resolution S-19/2, para. 36). The Assembly decided that the results of such a review should be considered under the consolidated agenda item entitled "Oceans and the law of the sea". The Meeting of States Parties to UNCLOS also underscored the need for coordination in oceans and law of the sea issues (see SPLOS/24).

6. At its seventh session, the Commission on Sustainable Development emphasized once again the fundamental fact that "oceans and seas constitute the major part of the planet that supports life, drives the climate and hydrological cycle, and provides the vital resources to be used to ensure well-being for present and future generations and economic prosperity, to eradicate poverty, to ensure food security and to conserve marine biological diversity and its intrinsic value for maintaining the conditions that support life on earth" (CSD decision 7/1, para. 1). In this regard, the Commission called upon Governments to strengthen national, regional and international action to develop integrated approaches to oceans and coastal area management; underlined the importance of international cooperation in ensuring that the oceans and seas remained sustainable through integrated management; furthermore brought to the attention of the international community areas of particular concern in relation to marine resources, land-based activities, marine science and other marine activities such as navigation, pollution by dumping, and offshore oil and gas operations.

7. The main thrust of its recommendations was aimed at finding solutions to achieve better ways to deal with problems and it proposed that international coordination and cooperation should be enhanced. Among the solutions offered was to enhance the effectiveness of the annual debate of the General Assembly on oceans and the law of the sea, and the Commission reiterated that the Assembly was the appropriate body to provide the coordination needed. Such a goal could be achieved by giving more time for the consideration and the discussion of the report of the Secretary-General and by inviting all the interested parties to take part in it.

8. This year, the cooperation between the Division for Ocean Affairs and the Law of the Sea and other bodies in preparing the report was further strengthened so as to provide the General Assembly with a report that would be at once more comprehensive and multidisciplinary. Relevant units of the Secretariat, funds, programmes, agencies and convention secretariats of the United Nations system, as well as other intergovernmental bodies were requested, as in the past, to submit contributions highlighting: (a) salient issues that had arisen in their respective areas of competence; (b) measures that were being undertaken to address those issues; and (c) matters which might require further actions and any recommendations they might wish to suggest thereon. The Secretary-General wishes to express his appreciation to the following organizations/bodies for their contributions: International Maritime Organization (IMO); Food and Agricultural Organization of the United Nations (FAO); Intergovernmental Oceanographic Commission (IOC); United Nations Educational, Scientific and Cultural Organization (UNESCO); World Meteorological Organization (WMO); United Nations Industrial Development Organization (UNIDO); International Labour Organization (ILO); International Atomic Energy Agency (IAEA); International Seabed Authority; Secretariat of the Convention on Biological Diversity; Division for Sustainable Development of the Department of Economic and Social Affairs of the United Nations Secretariat; International Court of Justice (ICJ); United Nations Conference on Trade and Development (UNCTAD); United Nations Environment Programme (UNEP); United Nations University (UNU); United Nations International Drug Control Programme (UNDCP); Economic Commission for Latin America and the Caribbean (ECLAC); International Coral Reef Initiative (ICRI); Organisation for Economic Cooperation and Development (OECD); Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), and Baltic Marine Environment Protection Commission (HELCOM) (via UNEP).

9. It was originally envisaged to present the contributions of relevant organizations/bodies, as submitted, in an annex to the report with the report itself containing only the salient points of the contributions. However, in view of the variations in approaches, formats, styles and points of departure and emphasis of the contributions, it was felt that a uniform and consistent presentation of the annex would be extremely difficult. The annex is not being presented; therefore, the present report instead contains extensive excerpts from the contributions, which, however, are available *in extenso* at the Web site of the Division (http://www.un.org/Depts/los).

II. UNCLOS, the Implementing Agreements and the newly established institutions

A. United Nations Convention on the Law of the Sea

1. Status of UNCLOS

10. The General Assembly in its resolution 53/32 reiterated the call upon all States that had not done so to become parties to UNCLOS and the Agreement relating to the implementation of Part XI of UNCLOS, in order to achieve the goal of universal participation. Since the last report (A/53/456), five States have deposited their instruments of ratification (Nepal, Belgium, Poland, Ukraine and Vanuatu). Thus, five years after the entry into force of UNCLOS on 16 November 1994, the total number of States parties, including one international organization, stands at 132.[2] In this context, it should be noted that out of 151 coastal States, 117 (77.4 per cent) are parties, and out of 42 land-locked States, 15 are parties.

2. Declarations and statements under article 310 of UNCLOS

11. Among States which have ratified UNCLOS since the last report (A/53/456) was issued, two made declarations, namely Belgium and Ukraine.

12. Belgium stated that it has transferred competence to the European Community for matters listed in the declaration made by the Community upon formal confirmation of UNCLOS on 1 April 1998.

13. Ukraine objected to any statements or declarations that might result in a failure to interpret the provisions of UNCLOS in good faith or were contrary to the ordinary meaning of terms in the context of UNCLOS or its object and purpose, irrespective of when such statements or declarations had been or might be made. As a geographically disadvantaged country bordering a sea poor in living resources, Ukraine also reaffirmed the necessity to develop international cooperation for the exploitation of the living resources of economic zones, on the basis of just and equitable agreements that should ensure access to fishing resources in the economic zones of other regions and subregions.

14. Thus, declarations upon ratification, accession or formal confirmation of UNCLOS have been made by 47 States and the European Community. Also, from 1982 to

1984, 35 States made declarations or statements upon signature. All declarations and statements with respect to UNCLOS and to the Agreement relating to the implementation of Part XI of UNCLOS made before 31 December 1996 have been analysed and reproduced in a United Nations publication in the Law of the Sea series;[3] full texts of those made after that date have been circulated to Member States in depositary notifications and have been published in *Law of the Sea Bulletins* Nos. 36-39. They are also available at the Web site of the Division for Ocean Affairs and the Law of the Sea (www.un.org/Depts/los) as well as that of the Treaty Section (www.un.org/Depts/Treaty).

15. In this respect it is recalled that the General Assembly, responding to concerns expressed by a number of States, called upon States, in its resolutions 52/26 of 26 November 1997 and 53/32 of 24 November 1998, to ensure that any declarations or statements that they had made or would make when signing, ratifying or acceding were in conformity with UNCLOS and to withdraw any of their declarations or statements that were not in conformity. The Secretary-General notes that so far, despite those appeals, none of the States whose declarations were objected against and are considered not to be in conformity with UNCLOS have withdrawn their declarations or statements.

16. Declarations and statements generally considered not to be in conformity with articles 309 (prohibiting reservations) and 310 include: (a) those which relate to baselines not drawn in conformity with UNCLOS; (b) those which purport to require notification or permission before warships or other ships exercise the right of innocent passage; (c) those which are not in conformity with the provisions of UNCLOS relating to: (i) straits used for international navigation, including the right of transit passage; (ii) archipelagic States' waters, including archipelagic baselines and archipelagic sea-lane passage; (iii) the exclusive economic zone or the continental shelf; and (iv) delimitation; and (d) those which purport to subordinate the interpretation or application of UNCLOS to national laws and regulations, including constitutional provisions.

3. Declarations under articles 287 and 298 of UNCLOS

17. Since the last report was issued, two States have made declarations under articles 287 or 298 of UNCLOS.

18. In accordance with article 287, Belgium declared that it had chosen, as a means for the settlement of disputes concerning the interpretation or application of UNCLOS, in view of its preference for pre-established jurisdictions, either the International Tribunal for the Law of the Sea or the International Court of Justice, in the absence of any other means of peaceful settlement of disputes that it might prefer.

19. Ukraine declared that it had chosen, as the principal means for the settlement of disputes concerning the interpretation or application of UNCLOS, an arbitral tribunal constituted in accordance with Annex VII to UNCLOS. For the consideration of disputes concerning the interpretation or application of UNCLOS in respect of questions relating to fisheries, protection and preservation of the marine environment, marine scientific research and navigation, including pollution from vessels and by dumping, Ukraine chose a special arbitral tribunal constituted in accordance with Annex VIII to UNCLOS. Referring to article 292 of UNCLOS, Ukraine also recognized the competence of the International Tribunal for the Law of the Sea in respect of questions relating to the prompt release of detained vessels or their crews.

20. In accordance with article 298 of UNCLOS, Ukraine declared that it did not accept, unless otherwise provided by specific international treaties, the compulsory procedures entailing binding decisions for the consideration of disputes relating to sea boundary delimitations, disputes involving historic bays or titles, and disputes concerning military activities.

21. As of 30 September 1999, 23 States had made their choice of procedure as provided for in article 287. This information is reflected, among others, in *Law of the Sea Information Circular* (LOSIC) No. 10.

B. Agreement relating to the implementation of Part XI of UNCLOS

1. Status of the Agreement

22. The Agreement relating to the implementation of Part XI of UNCLOS was adopted on 28 July 1994 (General Assembly resolution 48/263) and entered into force on 28 July 1996. The Agreement is to be interpreted and applied together with UNCLOS as a single instrument, and in the event of any inconsistency between the Agreement and Part XI of UNCLOS, the provisions of the Agreement shall prevail. After 28 July 1994, any ratification of or accession to UNCLOS represents consent to be bound by the Agreement as well. Furthermore, no State or entity can establish its consent to be bound by the Agreement unless it has previously established or establishes concurrently its consent to be bound by UNCLOS.

23. Despite the link between UNCLOS and the Agreement on Part XI of UNCLOS, not all States parties to UNCLOS are parties to the Agreement. As of 30 September 1999, 96 States parties to UNCLOS, including the European Community, were bound by the Agreement. Thirty-six other States parties which became parties to UNCLOS before the adoption of the Agreement (Angola, Antigua and Barbuda, Bahrain, Bosnia and Herzegovina, Botswana, Brazil, Cameroon, Cape Verde, Comoros, Costa Rica, Cuba, Democratic Republic of the Congo, Djibouti, Dominica, Egypt, Gambia, Ghana, Guinea-Bissau, Guyana, Honduras, Indonesia, Iraq, Kuwait, Mali, Marshall Islands, Mexico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, Somalia, Sudan, Tunisia, Uruguay, Viet Nam and Yemen) continued to apply the Agreement de facto during the past year without having expressed their consent to be bound by it. At the current stage, States that were parties to UNCLOS prior to the adoption of the Agreement have to establish their consent to be bound by the Agreement separately, by depositing an instrument of ratification or accession.

2. Provisional application of the Agreement and provisional membership in the Authority

24. The provisional application of the Agreement relating to the implementation of Part XI of UNCLOS terminated on the date of its entry into force, 28 July 1996. After that date, in accordance with the provisions of the Agreement, States and entities which had been applying it provisionally, and for which it was not yet in force, were able to continue to be members of the Authority on a provisional basis up to 16 November 1998 pending its entry into force for those States and entities (see A/53/456, para. 24). Eight of those States (Bangladesh, Belarus, Canada, Qatar, Switzerland, Ukraine, United Arab Emirates and United States of America) failed to become parties to UNCLOS and to the Agreement before 16 November 1998 and ceased to be members of the Authority on a provisional basis as of that date. Subsequently, Ukraine ratified UNCLOS and thus re-established its membership status.

C. Agreement for the implementation of the provisions of UNCLOS relating to the conservation and management of straddling fish stocks and highly migratory fish stocks

1. Status of the Agreement

25. The Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks (the 1995 Agreement on Fish Stocks) was adopted on 4 August 1995 by the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks. Unlike the Agreement relating to the implementation of Part XI of UNCLOS, there is no direct linkage between the 1995 Agreement on Fish Stocks and UNCLOS with respect to establishing the consent to be bound.

26. The Agreement was opened for signature until 4 December 1996 and received a total of 59 signatures. Since the last report, six States have ratified the Agreement or acceded to it (Canada, Cook Islands, Maldives, Monaco, Papua New Guinea and Uruguay). Thus, as of 15 September 1999, 24 States had expressed their consent to be bound by it.[4] The Agreement will enter into force 30 days after the date of deposit of the thirtieth instrument of ratification or accession. Although the Agreement provides, in its article 41, for the possibility of its provisional application, no State or entity has notified the depositary of its wish to do so.

2. Declarations and statements under article 43 of the Agreement

27. Pursuant to article 43 of the Agreement, four States (China, France, Netherlands, Uruguay) and the European Community made declarations upon signature, and six States (Canada, Mauritius, Norway, Russian Federation, United States of America and Uruguay) upon ratification or accession. Several of those declarations have been of an interpretative nature and dealt with, *inter alia*, flag State jurisdiction within the context of enforcement, conservation and management measures on the high seas and over the inspection of fishing vessels (arts. 21, 22 and 23). The declaration by the European Community upon signature also specified the competence of the European Community and that of its member States. All declarations have been circulated to Member States in depositary notifications and have been published in *Law of the Sea Bulletins* Nos. 30, 32, 33 and 34. Since the last report (A/53/456) was issued,

Canada and Uruguay have made declarations upon ratification. Canada stated that since according to article 42 of the Agreement no reservations or exceptions might be made to the Agreement, a declaration or statement pursuant to Article 43 could not purport to exclude or modify the legal effect of the provisions of the Agreement in their application to the State or entity making it. Canada declared that, consequently, it did not consider itself bound by declarations or statements pursuant to article 43 of the Agreement that had been made or would be made by other States or by entities and that excluded or modified the legal effect of the provisions of the Agreement in their application to such State or entity. Canada stated that lack of response by it to any declaration or statement should not be interpreted as its tacit acceptance and reserved the right at any time to take a position on any declaration or statement in the manner deemed appropriate. Uruguay confirmed its declaration upon signature, in which it had pointed out that the effectiveness of the regime established by the Agreement would depend on whether the conservation and management measures applied in areas beyond national jurisdiction took duly into account, and were compatible with, those adopted by the relevant coastal States with respect to the same stocks in areas under their national jurisdiction. The declaration further stated that in order for the regime to be fully effective it was necessary to adopt emergency conservation and management measures where a serious threat existed to the survival of one or more fish stocks as a result of a natural phenomenon or human activity. Uruguay also expressed the view that if an inspection carried out by a port State on a fishing vessel which was voluntarily present in one of its ports revealed that there were evident grounds for believing that the said fishing vessel had been involved in an activity that was contrary to the subregional or regional conservation and management measures on the high seas, then in exercise of its right and duty to cooperate the port State should so inform the flag State and request that the latter take over responsibility for the vessel for the purpose of ensuring compliance with the said measures.

3. Declarations concerning settlement of disputes

28. Four States had made declarations upon ratification pursuant to article 30 of the Agreement with respect to the procedures for the settlement of disputes: Canada, Norway, United States of America and Russian Federation. Most recently, Canada declared that it had chosen an arbitral tribunal constituted in accordance with Annex VII of UNCLOS as the means for the settlement of disputes under Part VIII of the Agreement. Canada also declared that it did not accept any of the procedures provided for in section 2 of Part XV of UNCLOS with respect to disputes referred to in article 298, paragraph 1, of UNCLOS.

D. Institutions created under UNCLOS

1. International Seabed Authority[5]

29. The International Seabed Authority is the organization through which States parties to UNCLOS shall, in accordance with the regime established in Part XI of UNCLOS and the Agreement relating to the implementation of Part XI of UNCLOS for the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction ("the Area"), organize and control activities in the Area, in particular with a view to administering the resources of the Area. The Authority commenced functioning in Kingston, Jamaica, on 16 November 1994, the date of entry into force of UNCLOS, pursuant to its article 308, paragraph 3.

30. In accordance with article 156, paragraph 2, of UNCLOS, all States parties to UNCLOS are *ipso facto* members of the Authority. As of 15 September 1999, there were 132 States parties to UNCLOS (see para. 10).

31. The fifth session of the Authority was held at Kingston from 9 to 27 August 1999. The most important substantive matter under consideration by the Council of the Authority was the draft Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (ISBA/4/C/4/Rev.1), commonly referred to as the mining code. The Council completed the first reading of the draft code. In the light of the discussions, the secretariat of the Authority, together with the President of the Council, prepared a revised text (ISBA/5/C/4 and Add.1). The need for the early approval of the code was emphasized, so that the Authority might enter into contracts for exploration with the seven registered pioneer investors whose plans of work had been approved by the Council in August 1997.

32. On the recommendation of the Finance Committee and the Council, the Assembly of the Authority approved a budget of $5,275,200 for the Authority for 2000, which continues to follow the evolutionary approach in the setting up of the Authority referred to in the Agreement relating to the implementation of Part XI of UNCLOS and endorsed by the Assembly in 1997.

33. The Council also adopted the draft Financial Regulations of the International Seabed Authority (ISBA/5/C/L.3). The Regulations will apply provisionally pending approval by the Assembly.

34. The Finance Committee considered the draft Staff Regulations of the Authority (ISBA/5/FC/WP.1). They will be considered by the Council at the sixth session.

35. The Headquarters Agreement between the Government of Jamaica and the International Seabed Authority was approved by the Assembly and was formally signed by the parties. (The Headquarters Agreement is contained in ISBA/3/A/L.3-ISBA/3/C/L.3; the report of Secretary-General of the Authority relating to the offer of the Government of Jamaica for the headquarters of the Authority is contained in ISBA/5/A/4 and Add.1.) The Agreement will govern the relationship between the Government of Jamaica and the Authority. It establishes the privileges and immunities of the Authority, its property, personnel and permanent representatives. The Agreement, together with the Protocol on Privileges and Immunities, adopted by the Assembly in 1998, are essential to the proper functioning of the Authority. The Protocol was adopted in March 1998 and opened for signature at Kingston. In accordance with its article 16, it remains open for signature at the United Nations Headquarters in New York until 16 August 2000. As of 30 September 1999, the Protocol had been signed by 22 States.[6] It shall enter into force 30 days after the date of deposit of the tenth instrument of ratification or accession; as of 30 September 1999, there was no ratification or accession.

36. Also considered during the session was a set of draft guidelines for the assessment of the possible environmental impact arising from the exploration for polymetallic nodules in the Area (ISBA/5/LTC/1). The Legal and Technical Commission completed the first reading of the guidelines, which will be further considered during the sixth session. The Authority had convened a workshop in Sanya, Hainan Island, China, in June 1998, and invited recognized scientists and representatives of the registered pioneer investors who had undertaken environmental research in the Area. The workshop made its recommendations with regard to the guidelines. The purpose of the guidelines is to describe the procedures to be followed by contractors in acquisition of baseline data, monitoring their exploration activities and reporting these activities to the Authority. The guidelines are meant to assist the contractor in preparing a plan of work for environmental monitoring and establishing a baseline. They are based on the current state of scientific knowledge of the deep-sea environment, and will require periodic review.

37. Immediately preceding the fifth session, the Authority also organized a Workshop on Proposed Technologies for Deep Seabed Mining of Polymetallic Nodules, held at Kingston from 3 to 6 August 1999. The workshop was divided into three sessions. The first session was devoted to presentations of and discussions on crucial technologies required for exploration and mining, such as the nodule collector (for recovering or harvesting nodules from depths of up to 5,000 metres), underwater platforms/vehicles and lifting systems (for bringing nodules from the bottom to the surface platforms). The presentations included the state-of-the-art technology as well as technology being developed with reference to other resources such as oil and gas, diamonds, etc. The second session was devoted to presentations by the pioneer investors that had done significant work in the development of technology for exploration for polymetallic nodules. The presentations also included their future plans and scope for cooperative approaches. The third session was devoted to advances in technology development with regard to other deep ocean minerals of possible relevance to polymetallic nodule mining, among them polymetallic sulphides, cobalt crusts and gas hydrates. The participants in the workshop included scientists and technologists from pioneer investors, the corporate sector and scientific institutions. The proceedings of the workshop will be published by the Authority during 2000.

2. International Tribunal for the Law of the Sea

38. The International Tribunal for the Law of the Sea was established with the election of the 21 members in August 1996. The terms of office of seven members of the Tribunal selected for the three-year term (see A/51/645, para. 70) expired on 30 September 1999 (see SPLOS/34). In accordance with the decision taken by the eighth Meeting of States Parties, the election to replace those members was held on 24 May 1999. The following members were elected and would serve for a period of nine years starting 1 October 1999, as stipulated in article 3 of the Statute of the Tribunal: Paul Bamela Engo and José Luis Jesus from the African Group; Joseph Akl and P. Chandrasekhara Rao from the Asian Group; Anatoly Lazarevich Kolodkin from the Eastern European Group; Vicente Marotta Rangel from the Latin American and Caribbean Group; and Rüdiger Wolfrum from the Western European and Other States Group.

39. During the past year, the Tribunal held three sessions. The sixth session was held from 21 September to 9 October 1998 and was devoted to organizational matters and consideration of arrangements for the further proceedings of the M/V "Saiga" (No. 2) case. The seventh session was held from 25 February to 16 April 1999, in conjunction with the hearing and deliberations in the M/V "Saiga" (No.2) case. The eighth session was held during September-October 1999. During the session, the judges of the Tribunal elected Judge P. Chandrasekhara Rao as President for the triennial period 1999-2002.

40. The Tribunal also received two requests from the Governments of Australia and New Zealand for Prescription of Provisional Measures against the Government of Japan concerning the conservation of the southern bluefin tuna. The Tribunal deliberated on the case and delivered its Order on 27 August 1999 (see paras. 42-45 and 581-585).

Judicial work of the Tribunal

41. *M/V Saiga case*. After the first judgment of the Tribunal, on 4 December 1997, on the prompt release of the M/V *Saiga*,[7] by an exchange of letters, the parties agreed to submit to the Tribunal the dispute regarding the merits of the case, including the Request for provisional measures. By an Order dated 20 January 1998, the Tribunal decided to accept the submission of the case on the terms requested by the parties and the case was entered in the List of Cases as the M/V *Saiga* (No. 2) case. By an Order of 23 February 1998, the Tribunal fixed the time limits for the filing of written proceedings. On 6 October 1998, the Tribunal issued an Order setting the time limits for the filing of the second round of pleadings. Public sittings regarding the Request for the prescription of provisional measures were held on 8 March 1999, during which oral presentations, examination and re-examination of witnesses were conducted. On 11 March 1999, the Tribunal delivered its Order on the request[8] and on 1 July 1999, the Tribunal delivered its judgment on the merits of the case.[9]

42. *Southern Bluefin Tuna Cases (Nos. 3 and 4)*. On 30 July 1999, the Tribunal received two requests for the Prescription of Provisional Measures in accordance with article 290, paragraph 5, of UNCLOS, from the Government of Australia and the Government of New Zealand in a dispute against Japan regarding the conservation and management of the southern bluefin tuna.

43. In the absence of agreement among the parties for the settlement of the dispute, Australia and New Zealand decided to submit the dispute to an arbitral tribunal as provided for under Annex VII to UNCLOS. The provisional measures requested include the cessation of the current experimental fishing programme, the restriction of the future catches of Japan, a requirement to follow the precautionary principle in further fishing and other Orders which should protect the rights of the parties.

44. The Tribunal, after deliberations on the applications of both Australia and New Zealand, decided to join the applications. The Tribunal held hearings on the request on 18, 19 and 20 August 1999. The Tribunal deliberated on the request after the hearing on 20 and 26 August 1999 and delivered its judgment on 27 August 1999. (For further details and a summary of the judgment, see paras. 581-585).

45. The hearing was widely publicized and considerable interest was exhibited in the proceedings. In addition, a *voir dire* never previously used in an international dispute mechanism was utilized during the hearings. (A *voir dire* is a preliminary interrogation of an expert witness in order to ascertain his/her independence and competence.)

46. *Nomination to the Commission on Free Transit*. At the request of Croatia and Bosnia and Herzegovina, the Tribunal, acting in its judicial capacity, nominated the seventh member of a Commission established by those two States to supervise, monitor, interpret and arbitrate the Agreement on Free Transit through the Territory of Croatia to and from the Port of Ploče and through the Territory of Bosnia and Herzegovina (see also para. 108). The member is to serve as President of that Commission. Judge Thomas Mensah was nominated to serve in that capacity.

Financial matters

47. The budget of the Tribunal for 2000 was adopted by the Meeting of States Parties at its ninth meeting held in New York from 19 to 28 May 1999 (see SPLOS/L.12 and SPLOS/L.14). The approved budget for 2000 amounted to a total of $7,657,019. The amount is composed of: (a) a recurrent expenditure of $6,672,255; (b) a non-recurrent expenditure of $255,400; (c) contingency funds of $679,364 made available to the Tribunal with a view to providing the Tribunal with the necessary financial means to consider cases, in particular those requiring expeditious proceedings, with the proviso that the funds should be used only in the event of cases being submitted to the Tribunal; and (d) an amount of $50,000 for advances to the working capital fund of the Tribunal in 2000. The Meeting also decided that, on an exceptional basis, savings from appropriations in the budget for 2000 up to a maximum of $200,000 would also be credited to the working capital fund (see also SPLOS/48, paras. 24-27).

48. The Tribunal requested the Meeting of States Parties to approve an adjustment in the remuneration of the members of the Tribunal in the light of General Assembly resolution 53/214 of 18 December 1998 whereby the annual salary of the judges of the International Court of Justice was set at $160,000, effective 1 January 1999. The Tribunal in submitting the proposal recalled the decision of the fourth Meeting of States Parties regarding the principle of "maintaining equivalence of the remuneration of the members of the Tribunal with the remuneration levels of the judges of the International Court of Justice". The Meeting

of States Parties upheld the principle of equivalence of remunerations of the judges of ICJ and those of the Tribunal and approved that the setting of the remuneration of the members of the Tribunal at a maximum of $160,000, effective 1 January 2000.[10]

49. The revised Draft Financial Regulations of the Tribunal (SPLOS/36) were considered by the ninth Meeting of States Parties. A number of proposals were made by various delegations, including proposals on the scale of assessment for the budget of the Tribunal. The Meeting decided to continue its deliberations on the Financial Regulations at its tenth Meeting with a view to their adoption. In this regard, delegations were requested to submit in writing further comments and amendments on the matter to the Secretariat by 30 November 1999 (see also SPLOS/48, paras. 35-37).

Agreements

50. On 1 July 1999, the Agreement on the Privileges and Immunities of the International Tribunal for the Law of the Sea, adopted by the seventh Meeting of States Parties, was closed for signature. The Agreement has been signed by 21 States.[11] Norway and the Netherlands have ratified the Agreement, which requires ratification by 10 States to enter into force.

3. Commission on the Limits of the Continental Shelf

51. In 1999, the Commission on the Limits of the Continental Shelf held its fifth and sixth sessions from 3 to 14 May and from 30 August to 3 September respectively. The functions of the Commission, whose 21 members were elected in 1997, are to consider the data and other material submitted by coastal States concerning the outer limits of the continental shelf in areas where those limits extend beyond 200 nautical miles, to make recommendations to coastal States in accordance with UNCLOS, as well as to provide scientific and technical advice in this respect if requested by coastal States.

52. The Commission adopted in its final form the Scientific and Technical Guidelines (CLCS/11), which are intended to provide assistance to coastal States regarding the technical nature and scope of the data and information which they have to submit to the Commission. It also adopted annexes to the Guidelines (CLCS/11/Add.1) which, *inter alia*, include flowcharts providing a simplified outline of the procedures described in the relevant parts of the Guidelines themselves. The Commission took up the consideration of the issues of training necessary to develop the knowledge and skills for preparation of the submissions in respect of the outer limits of the continental shelf as required by UNCLOS. Among other matters, the Commission continued studying the issue of the establishment of a trust fund to assist in financing the participation of its members from developing countries. At the sixth session, the Commission also elected its officers for the remaining period of its current membership.

53. The Scientific and Technical Guidelines deal with geodetic and other methodologies stipulated in article 76 for the establishment of the outer limits of the continental shelf, using such criteria as determination of the foot of the slope of the continental margin, sediment thickness and structure of submarine ridges and other underwater elevations. Several States, namely Australia, Canada, New Zealand and the United States of America have submitted comments on the Guidelines prior to their final adoption.

54. All issues of substance were first discussed in the working groups which had been set up at the third session of the Commission for consideration of each chapter of the Guidelines. At the final stage of the debate, a number of comments were made on various sections of the text, and substantive revisions were proposed by some members with a view to producing a final consensus text. In the final version of the Guidelines, significant changes were incorporated in its provisions dealing, *inter alia*, with such matters as baselines; the selection of straight lines to delineate the outer edge of the continental shelf; some aspects of geodetic methodologies; sources of data for bathymetric measurements; establishment of the foot of the continental slope determined as the point of maximum change of gradient, and as determined on the basis of evidence to the contrary; ridges; and sediment thickness.

55. The issue of training, which was originally considered at the fifth session, was taken up as a priority item at the sixth session as a way to promote better understanding of both article 76 of UNCLOS and of the Guidelines, in particular taking account of the needs of developing States. During the inter-sessional period, research was carried out to identify training needs and available means, including a review of existing training projects and capacities within the United Nations system (CLCS/15). The Commission decided to address a letter to the President of the General Assembly, highlighting the issues relevant to the need for training identified by the Commission and proposing draft provisions for inclusion in the annual resolution of the General Assembly on the item "Oceans and the law of the sea". Letters will also be sent to the Intergovernmental Oceanographic Commission (IOC) and the International Hydrographic Organization (IHO), transmitting the basic

documents of the Commission and requesting them to familiarize the Commission with their programmes as they concern article 76.

56. It was also decided to prepare a manual in the form of a flowchart to assist coastal States throughout the process of preparation of a submission to the Commission. The Commission decided to convene an open meeting during its seventh session in 2000 with a view to familiarizing representatives of coastal States with the necessity for implementing the provisions of article 76 relating to the establishment of the outer limits of the continental shelf beyond 200 nautical miles, bearing in mind the requirement of UNCLOS to submit particulars of such limits to the Commission "within ten years of the entry into force of UNCLOS for that State" (article 4 of Annex II to UNCLOS). It was considered important to disseminate the documents of the Commission in order to raise awareness among States of the Commission's activities, including the preparation of an information document on the functions and activities of the Commission, as well as on the need for coastal States to implement article 76. The Commission also decided to undertake a draft outline for a proposed training course of approximately five days' duration aimed at practitioners who would take part in the preparation of the submission of a coastal State.

57. With respect to the creation of a trust fund to assist in financing the participation of members of the Commission from developing countries, the Chairman of the Commission provided information on the results of the deliberations at the Meeting of States Parties, as reflected in the report of the ninth Meeting of States Parties (SPLOS/48) and the letter from the President of the ninth Meeting of States Parties addressed to the Chairman of the Commission on the Limits of the Continental Shelf (SPLOS/49). The Commission took note of the estimated costs for the establishment of a trust fund prepared by the Secretariat (CLCS/16) and requested that the relevant information be submitted to the President of the tenth Meeting of States Parties.

58. The Commission also discussed the information provided by the Secretariat on its technical and logistical preparedness to provide assistance to the Commission in the consideration of submissions of coastal states (CLCS/INF/1), and in that regard emphasized the importance of acquiring the most up-to-date software available on ocean information systems and the delineation of the outer limits of maritime zones.

59. The election of the officers of the Commission took place on 1 September 1999. The Commission elected by acclamation Mr. Yuri B. Kazmin as its Chairman for the second period of two and one half years beginning on 16 December 1999; this period would complete the five-year term of the current membership of the Commission. Following informal consultations among its members and taking into account the principle of equitable geographic representation, the Commission elected Mr. Osvaldo P. Astiz, Mr. Lawrence F. Awosika and Mr. Yong Ahn Park as Vice-Chairmen, and Mr. Peter F. Croker as Rapporteur, also by acclamation.

60. In view of the anticipated future needs of the Commission concerning the editorial review of its documents, reports, etc., as well as possible amendments to the Scientific and Technical Guidelines, the Commission decided to convert the Editorial Committee from an ad hoc to a permanent subsidiary body of the Commission and elected Mr. Galo Carrera as its Chairman. The Commission also decided to establish the Working Group on Training as a permanent subsidiary body and elected Mr. Lawrence F. Awosika as its Chairman.

61. The Commission decided that its seventh session would be held for one week from 1 to 5 May 2000. It would also be decided at that session if it would be necessary to hold a second session during the same year if there was no submission from a coastal State. If the Commission were to decide in favour of holding another session that year, the tentative dates for its eighth session would be 28 August to 1 September 2000.

E. Meetings of States Parties

62. The ninth Meeting of States Parties to UNCLOS, convened by the Secretary-General in accordance with article 319, paragraph 2 (e), of UNCLOS, was held from 19 to 28 May 1999. Priority items on the agenda of the Meeting were the draft budget of the International Tribunal for the Law of the Sea for 2000 (see para. 47) and the election of the seven members of the Tribunal (see para. 38). Other important matters considered were the adjustment of the remuneration of members of the Tribunal, (see para. 48), the financial regulations of the Tribunal (see para. 49), the conditions under which retirement pensions may be given to the members of the Tribunal and issues related to the Rules of Procedure for Meetings of States Parties, in particular rule 53, dealing with decisions on questions of substance. The Meeting also dealt with items submitted to it by the Commission on the Limits of the Continental Shelf (see para. 57) (see SPLOS/48).

63. The Meeting also dealt with other matters concerning the Tribunal. It considered the Staff Regulations of the

Tribunal as adopted by the Tribunal (SPLOS/37), which are based on the Staff Regulations of the United Nations and on those adopted by the International Court of Justice, and took note of them. The Meeting furthermore considered conditions under which retirement pensions may be given to members of the Tribunal and adopted the Pension Scheme Regulations for Members of the International Tribunal for the Law of the Sea (SPLOS/47).

64. Continuing the discussion of rule 53 of the Rules of Procedure of the Meeting of States Parties (SPLOS/2/Rev.3), the Meeting addressed the issue of the modalities for decision-making on financial and budgetary matters; however, it failed to produce a generally acceptable solution. It was decided to pursue the matter at the tenth Meeting.

65. Views were expressed that the Meeting should not limit its role solely to matters of an administrative nature. It should also receive for possible discussion the reports of the Commission, of the Secretary-General under article 319 of UNCLOS as well as of the International Seabed Authority. It was suggested also that the Meeting of States Parties, as had been the practice a few years ago, should engage once again in substantive discussion of matters relating to oceans and the law of the sea. However, different viewpoints were expressed on the subject, focusing, *inter alia*, on the role of the Meeting of States Parties in dealing with issues related to UNCLOS, which specified its convening for matters relating to the Tribunal and the Commission. It was also noted in this context that the Commission on Sustainable Development had recently recommended the establishment of an appropriate forum or process to review oceans and law of the sea issues under the aegis of the United Nations General Assembly (see CSD decision 7/1, paras. 39-45). Since there was no consensus in this regard, it was agreed that the Meeting would continue the discussion at the tenth Meeting of States Parties.

66. The representative of a non-governmental observer organization, the Seamen's Church Institute, addressed the Meeting and drew its attention to the need for the protection of seafarers, in particular in relation to piracy and in cases of abandoned ships, and to the problems concerning the repatriation of stranded seafarers.

67. The tenth Meeting of States Parties to UNCLOS will be held in New York from 22 to 26 May 2000. Among the items on the agenda will be the report of the International Tribunal for the Law of the Sea; the draft budget of the Tribunal for 2001; the draft Financial Regulations of the Tribunal and Rules of Procedures of the Meeting of States Parties, in particular, the rules dealing with decisions on questions of substance (rule 53).

F. Dispute settlement mechanisms

68. The obligation to settle disputes by peaceful means is provided for in Part XV of UNCLOS. Among the dispute settlement mechanisms envisaged by UNCLOS are conciliation, arbitration and special arbitration.

Conciliation

69. The complete list of conciliators drawn up and maintained by the Secretary-General of the United Nations, in accordance with UNCLOS, Annex V, article 2, can be found at the Web site of the Division for Ocean Affairs and the Law of the Sea (http://www.un.org/Depts/los/los_sdm2.htm). Since last year's report, (A/53/456, para. 81), the following conciliators have been added to the list: Sres. Helmut Brunner Nöer, Rodrigo Díaz Albónico, Carlos Martínez Sotomayor and Eduardo Vío Grossi, nominated by Chile; and Prof. Umberto Leanza, Ambassador Luigi Vittorio Ferraris and Ambassador Giuseppe Jacoangeli, nominated by Italy.

Arbitration

70. The complete list of arbitrators drawn up and maintained by the Secretary-General of the United Nations, in accordance with UNCLOS, Annex VII, article 2, can be found at the Web site of the Division for Ocean Affairs and the Law of the Sea (http://www.un.org/Depts/los/los_sdm2.htm). Since last year's report (A/53/456, para. 80), the following conciliators have been added to the list: Sir Gerard Brennan AC KBE, Mr. Henry Burmester QC, and Prof. Ivan Shearer AM, nominated by Australia; Sr. José Miguel Barros Franco, Srta. María Teresa Infante Caffi and Sres. Edmundo Vargas Carreño and Fernando Zegers Santa Cruz, nominated by Chile; Prof. Umberto Leanza and Prof. Tullio Scovazzi, nominated by Italy; and Mr. José Antonio de Yturriaga Barberán, nominated by Spain.

Special arbitration

71. For special arbitration, the following specialized agencies are required to draw up and maintain the list of experts: in the field of fisheries, the Food and Agriculture Organization of the United Nations (FAO); for the protection and preservation of the marine environment, the United Nations Environment Programme (UNEP); for marine scientific research, the Intergovernmental Oceanographic Commission (IOC); and for navigation, including pollution from vessels and by dumping, the International Maritime Organization (IMO). Copies of the lists are sent by the

specialized agencies to the Secretary-General of the United Nations. As of 15 September 1999, the Secretary-General had received updated lists from IMO and FAO and a comprehensive list from UNEP. The lists will be published in *Law of the Sea Information Circular* (LOSIC) No. 10.

III. Maritime space

A. Practice of States: regional review

72. The following review, on a regional basis, of main developments relating to legislation and delimitation treaties continues to demonstrate the wide degree of acceptance of UNCLOS by States which have taken steps to conform their national legislation with its provisions, as well as the growing importance of maritime delimitation in the practice of States.

73. The positive trend of States adapting their legal practice to the provisions of UNCLOS should not lead to the conclusion that the provisions of the Convention are fully respected in all cases. As reported last year (A/53/456, para. 85), there are several examples of new national legislation departing from the rules set out in UNCLOS, such as those relating to prior notification or authorization for the exercise of the right of innocent passage in the territorial sea, the right of navigation in the exclusive economic zone in respect of certain types of vessels, or the regulation of marine scientific research in a manner not in conformity with the consent regime established in UNCLOS. It is important to recall, in this respect, the unified character of UNCLOS, which has been consistently reaffirmed by the General Assembly, most recently in its resolution 53/32. It is also relevant to note that many States, both parties and non-parties, have not yet harmonized their legislation with the provisions of UNCLOS.

74. The delimitation of maritime boundaries is becoming increasingly important in the practice of States. Many maritime delimitations, in particular of the exclusive economic zone, are still pending between States with opposite or adjacent coasts. It is particularly important that States agree on secure maritime boundaries since such agreements contribute to the promotion of peace and stability at the regional level and help create the legal and political certainties required to attract investment in such fields as oil and gas exploitation and fisheries. In order to assist States, the Division for Ocean Affairs and the Law of the Sea is preparing a handbook providing basic legal, technical and practical information on maritime boundary delimitation. In this respect, the Division convened a Group of Experts on Maritime Delimitation from 7 to 9 April 1999 at United Nations Headquarters. The Group of Experts was composed of practitioners (lawyers, cartographers, judges) representing a wide range of countries and legal systems.

75. A brief regional summary of developments in State practice during the past year, ending on 15 September 1999, is provided below.

1. Africa

76. Equatorial Guinea on 6 March 1999 adopted "Act No. 1/1999 designating the median line as the maritime boundary of the Republic of Equatorial Guinea", which contains lists of geographical coordinates of points for the drawing of the outer limit lines of the territorial sea and the exclusive economic zone off the island of Bioko and the coast of Río Muni, in the north, and the outer limit lines of the exclusive economic zone off the island of Annobón in the south, (see *Law of the Sea Bulletin* No. 40).

77. Equatorial Guinea and Sao Tome and Principe concluded on 26 June 1999 the Treaty regarding the Delimitation of the Maritime Boundary between the Republic of Equatorial Guinea and the Democratic Republic of Sao Tome and Principe (to be published in *Law of the Sea Bulletin* No. 41). The Treaty, which came into effect provisionally at the time of its signature, uses the median line as the general criterion for the delimitation of the maritime zones of the two countries. This criterion had been incorporated in the previous national legislation of both Equatorial Guinea and Sao Tome and Principe. In this respect, it is recalled that Sao Tome and Principe adopted its Act No. 1/98 on 23 March 1998 providing, in article 4, for the establishment of a 200-nautical-mile exclusive economic zone and specifying, in paragraphs 2 and 3, that Sao Tome and Principe's outer limit of the exclusive economic zone shall not extend beyond the "median equidistant line" in the case of States with opposite coasts. (For Act No. 1/98 of Sao Tome and Principe, see *Law of the Sea Bulletin* No. 37.)

2. Latin America and the Caribbean

78. Uruguay adopted Act No. 17.033 on 20 November 1998 which provides for the maritime zones of Uruguay, i.e. internal waters, territorial sea, contiguous zone, exclusive economic zone and continental shelf. In general, the law follows the provisions of UNCLOS concerning the breadth of the zones and the legal regime applicable to them. Nevertheless, article 6 of the Act asserts Uruguay's exclusive right to construct, authorize and regulate the construction, operation and use of artificial islands,

installations and structures in its exclusive economic zone "regardless of their nature and characteristics". Also, article 8 provides that the carrying out of military exercises by foreign countries in the exclusive economic zone of Uruguay will be subject to the authorization of the Government of Uruguay. The geographical coordinates of points for the drawing of baselines, listed as annex I to the Act, start at the midpoint of the agreed closing line of the Rio de la Plata that joins Punta del Este (Uruguay) and Punta Rasa del Cabo San Antonio (Argentina). The delineation of the various maritime zones is shown on the two nautical charts which constitute annex II to Act No. 17.033. Both the list of geographical coordinates and the maps were deposited with the Secretary-General of the United Nations on 19 July 1999 (see para. 90). (The Act will be published in *Law of the Sea Bulletin* No. 41.)

3. Europe and North America

79. On 6 May 1999, Denmark transmitted to the United Nations Act No. 200 of 7 April 1999 on the Delimitation of the Territorial Sea (see *Law of the Sea Bulletin* No. 40), as well as the Executive Order No. 242 of 21 April 1999 concerning the Delimitation of Denmark's Territorial Sea and the Royal Ordinance No. 224 of 16 April 1999 governing the admission of foreign warships and military aircraft to Danish territory in time of peace.

80. Act No. 200 revokes the previous Order No. 437 of 21 December 1966 on the Delimitation of the Territorial Sea. The Act, which provides for the extension of the territorial sea of Denmark as a general rule to a limit of 12 nautical miles, entered into force on 1 May 1999. Executive Order No. 242 of 21 April 1999 indicating the coordinates of the baselines as well as the outer limit of the territorial sea of Denmark, adopted in pursuance of Act No. 200, also entered into force on 1 May 1999.

81. In connection with the entry into force of the Act, a circular note addressed to all heads of mission accredited to Denmark noted that "the Royal Ordinance of 27 February 1976 governing the admission of foreign warships and military aircraft to Danish territory in time of peace has been amended by Royal Ordinance No. 224 of 16 April 1999 [taking effect as from 1 May 1999]. The amendment involves that an advance permission or notification is no longer required for the innocent passage of foreign warships and non-commercial ships owned or used by a foreign State in parts of the territorial sea not comprised by the recognized historical regime governing the Danish Straits. Consequently, in the Straits, the existing provisions are not affected. The existing provisions in the Ordinance on military flights over Danish territory and on the admission of foreign vessels to harbours and internal waters remain unchanged. The Ordinance remains in force for the territorial sea of the Faroe Islands and Greenland and the airspace above".

82. An Agreement relating to the Maritime Delimitation in the area between the Faroe Islands and the United Kingdom was concluded on 18 May 1999 between the Government of the Kingdom of Denmark together with the Home Government of the Faroe Islands, on the one hand, and the Government of the United Kingdom of Great Britain and Northern Ireland, on the other. The Agreement, which resolves the long-standing maritime dispute concerning the delimitation between the Faroe Islands and Scotland, defines a continental shelf boundary within 200 nautical miles from the baselines from which the territorial sea of each country is measured. The Agreement also defines a fisheries zone boundary consisting partly of a line which coincides with the continental shelf line, and a "special area" encompassing the large banana-shaped area to the south of the Faroe Islands which was previously subject to overlapping fisheries zone claims. In the special area both countries continue to enjoy fishing rights in accordance with articles 5, 6 and 7 of the Agreement. (The Agreement will be published in *Law of the Sea Bulletin* No. 41).

83. Sweden and Estonia concluded an Agreement on the Delimitation of their Maritime Zones in the Baltic Sea on 2 November 1998. The Agreement delimits both the exclusive economic zone and the continental shelf zone of Sweden and Estonia. Article 2 lists the geographical coordinates of the four points agreed upon and stipulates that the delimitation line shall continue to a point to be negotiated at a later stage with the third State concerned, Finland. (The Agreement will be published in the *Law of the Sea Bulletin*).

84. By a proclamation dated 2 September 1999, the United States established a contiguous zone, contiguous to its territorial sea. This newly established zone, which extends to 24 nautical miles from the baselines of the United States drawn according to international law, allows the United States to exercise the control necessary to prevent infringement of its customs, fiscal, immigration and sanitary laws and regulations, as permitted in article 33 of UNCLOS. In addition, the proclamation refers specifically to the prevention of the removal of underwater cultural heritage found within the established zone in accordance with the provisions of article 303 of UNCLOS.

B. Summary of national claims to maritime zones

85. Compliance of States with the provisions of UNCLOS regarding the establishment of the outer limits of maritime zones is very high. Legislation adopted by States since last year's report has not altered significantly the statistics about national claims presented in the table entitled "Summary of claims to maritime zones" (A/53/456, paras. 99-100), except for new 24-nautical-mile contiguous zones of Uruguay and the United States, established by Act No. 17.033 on 20 November 1998 and Proclamation dated 2 September 1999 respectively. Nevertheless, some other changes have been introduced in the summary table, taking into account existing legislation communicated to the Division during the past year and also the revisions reflected in the "Table of national claims to maritime zones worldwide" included in *Law of the Sea Bulletin* No. 39.

86. Only nine States continue to claim a territorial sea extending beyond 12 nautical miles. Of these, seven States claim 200 nautical miles: five in Africa and two in Latin America. Two Latin American States, non-parties to UNCLOS, each claim a single 200-nautical-mile area expressly recognizing freedoms of navigation and overflight beyond 12 miles. Two Asian States each claim a single maritime area defined by coordinates extending beyond 12 nautical miles from the baselines. Both groups of States are listed in the summary table in a separate category under "Others". There is only one State claiming a contiguous zone extending beyond 24 miles (35 nautical miles).

87. As regards the breadth of exclusive economic zones and fishery zones, the practice of States shows a total compliance with the provisions of UNCLOS. Some States combine exclusive economic zones with fisheries zones, while others have one or the other depending on different circumstances. Concerning fisheries zones, the table only reflects the States which do not have exclusive economic zones and whose fisheries zones extend beyond the limits of their territorial sea. Many States (25) continue to maintain their old legislation on the continental shelf, which includes the definition contained in the 1958 Convention on the Continental Shelf. Of the 22 States which do not define the limits of their continental shelf either by reference to the criteria established in UNCLOS or those of the 1958 Convention, only 2 are not in conformity with article 76 of UNCLOS.

C. Deposit of charts and lists of geographical coordinates and compliance with the obligation of due publicity

1. Deposit and due publicity of charts and lists of geographical coordinates relating to straight baselines, archipelagic baselines and various maritime areas

88. Under articles 16 (2), 47 (9), 75 (2) and 84 (2) of UNCLOS, the coastal State is required to deposit with the Secretary-General its charts and/or lists of geographical coordinates for the drawing of straight baselines and archipelagic baselines and those showing the outer limit lines of the territorial sea, the exclusive economic zone and the continental shelf. Coastal States are also required to give due publicity to all these charts and lists of geographical coordinates. Similarly, under article 76, paragraph 9, the coastal State is further required to deposit with the Secretary-General charts and relevant information permanently describing the outer limits of its continental shelf extending beyond 200 nautical miles. In this case, due publicity is to be given by the Secretary-General.

89. The Division for Ocean Affairs and the Law of the Sea, as the responsible unit of the Secretariat, has established facilities for the custody of charts and lists of geographical coordinates to be deposited in accordance with UNCLOS. The Division has also adopted a system for their dissemination in order to assist States in fulfilling their obligations of giving due publicity to such charts and lists of coordinates. In this respect, the Division informs States parties to UNCLOS of the deposit of charts and geographical coordinates through a "Maritime Zone Notification". Such information is compiled in the *Law of the Sea Information Circular* (LOSIC) for distribution to all States. As of 15 September 1999, the following States parties had deposited with the Secretary-General charts and/or lists of geographical coordinates relating to straight and archipelagic baselines and various maritime zones: Argentina, Belgium, Chile, China, Costa Rica, Cyprus, Equatorial Guinea, Finland, Germany, Italy, Jamaica, Japan, Myanmar, Nauru, Norway, Pakistan, Romania, Sao Tome and Principe, Spain, Tunisia and Uruguay.

90. Since last year's report, the following States have deposited charts and/or lists of coordinates with the Secretary-General: Belgium (nautical chart showing the outer limit lines of the continental shelf including the geographical coordinates of points, and the outer limit lines of the territorial sea); Chile (chart showing the maritime boundary between Argentina and Chile, with the list of

Summary of claims to maritime zones[a]

Maritime zone	*Outer limit*	*African States*	*Asian and Pacific States*	*European and North American States*	*Latin American and Caribbean States*	*Total*
Territorial sea	12 M or less	32	46	30	27	135
	More than 12 M	6	1	-	2	9
Contiguous zone	24 M or less	18	24	11	17	70
	More than 24 M	-	1	-	-	1
Exclusive economic zone	200 M or less (up to delimitation line, median line, determination by coordinates, etc.)	27	36	20	27	110
Fishery zone	200 M or less	3	2	9	-	14
Continental shelf	200 M and/or outer edge of continental margin (UNCLOS)	10	16	5	13	44
	Depth 200 metres and/or expoitability (1958 Convention)	4	7	10	3	24
	Others (natural prolongation, no definition provided, etc.)	1	6	8	7	22
Other maritime areas	200 M	-	-	-	2	2
	Rectangle defined by coordinates	-	2	-	-	2

[a] Data available for all coastal States except Bosnia and Herzegovina, Georgia and Slovenia.

M = nautical mile.

geographical coordinates of points); Equatorial Guinea (lists of geographical coordinates of points for the drawing of the limits of the exclusive economic zone and the lateral limits of the territorial sea, with an illustrative map); Japan (charts showing the straight baselines and outer limits of some parts of the territorial sea); Nauru (list of geographical coordinates of points for the drawing of straight baselines and outer limit lines of the territorial sea and exclusive economic zone); Pakistan (list of geographical coordinates of points for the drawing of the straight baselines, with an illustrative map); Tunisia (list of geographical coordinates of points for the drawing of straight baselines); and Uruguay (list of geographical coordinates of points for the drawing of straight baselines, and charts showing the outer limit lines of the territorial sea and the exclusive economic zone).

91. The Division maintains a Geographic Information System (GIS) database using the latest technology to store deposited information such as maps, charts and lists of coordinates in one global digital database. As described in last year's report (A/53/456, para. 104), the GIS database enables the Division to store and process geographic information and produce custom-tailored cartographic outputs through the conversion of conventional maps, charts and lists of coordinates in a digital format. It also helps the Division to verify the accuracy of the information submitted. The GIS database is connected with the national legislation database, which enables the Division to access other relevant information linked to certain geographic features.

92. In order to comply with the relevant provisions of UNCLOS, States parties are required to provide appropriate information regarding original geodetic datum together with the submission of their charts and/or lists of geographical coordinates. It is desirable that States parties provide all the necessary information for conversion of the submitted geographic coordinates from the original datum into the World Geodetic System 84 (WGS 84 — geodetic datum system which is increasingly being accepted as a norm).

2. Other due publicity obligations established by UNCLOS

93. The Division has also sought to assist States in the fulfilment of their other obligations of due publicity established by UNCLOS. These obligations relate to all laws and regulations adopted by the coastal State relating to innocent passage through the territorial sea (article 21 (3)) and all laws and regulations adopted by States bordering straits relating to transit passage through straits used for international navigation (article 42 (3)). No State submitted new information regarding articles 21 and 42 of UNCLOS since last year's report. In addition, assistance to States concerning their obligations of due publicity regarding sea lanes and traffic separation schemes under articles 22, 41 and 53 of UNCLOS is within the competence of IMO.

IV. States with special geographical characteristics

A. Small island States

94. By its resolutions S-19/2 of 28 June 1997, 52/202 of 18 December 1997, 53/189 A of 15 December 1998 and 53/189 B of 7 April 1999, the General Assembly decided to convene a special session on 27 and 28 September 1999 (twenty-second special session) to review and appraise the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States (the Barbados Programme of Action). The Commission on Sustainable Development, acting as preparatory body for the special session, met at United Nations Headquarters on 23 and 30 April and from 9 to 10 September 1999.

95. In the declaration annexed to its resolution adopted at the twenty-second special session (resolution S-22/2), the General Assembly recognized, *inter alia*, that small island developing States communities are custodians of large areas of the world's oceans, and have a high share of global biodiversity, that they are at the forefront in the fight against climate change and that their exposure and predicament underline the urgent need to take action to implement the Programme of Action. The Assembly also endorsed the recommendations of the Commission on Sustainable Development, as included in the document entitled "State of progress and initiatives for the future implementation of the Programme of Action for the Sustainable Development of Small Island Developing States", contained in annex II to the resolution.

96. In addition to addressing the issue of the adverse effects of the climate change (see paras. 517-518), the Commission focused on the problems of coastal and marine resources of small island developing States. In its recommendations as contained in annex II to resolution S-22/2, the Commission noted that the health, protection and preservation of coastal and marine resources were fundamental to the livelihood and sustainable development of small island developing States. Improved coastal and ocean management as well as conservation of the coasts, oceans and seas and the sustainable use of coastal and marine resources and arrangements and initiatives, including

efforts aimed at reducing land and sea-based pollution, were critical both in support of regional fisheries organizations and in maintaining the oceans as a source of food and a principal factor in tourism development.

97. Other goals and activities to be pursued and supported were the establishment and/or strengthening of programmes within the framework of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and the regional seas programme, to assess the impact of planning and development on the coastal environment, including coastal communities, wetlands, coral reef habitats and the areas under the sovereignty or national jurisdiction of small island developing States; strengthening of national capacity for the development of a methodology or guidelines for sound practices and techniques suitable for small island developing States, for achieving the integrated management and sustainable development of the coastal and marine areas under the sovereignty or national jurisdiction of small island developing States, building on existing experience in that area; and enhancement of the conservation and sustainable management and utilization of coastal zone ecosystems and resources of the marine areas under the sovereignty or national jurisdiction of small island developing States.

98. Further goals and activities included ratification of or accession to by States of the 1995 Agreement on Fish Stocks and the 1993 FAO Agreement to Promote Compliance with Conservation and Management Measures by Fishing Vessels on the High Seas (the Compliance Agreement) and active participation by small island developing States in emerging or existing regional fisheries management organizations in order to fully implement those agreements; formulation of policies, strategies and measures to address fisheries needs, including the urgent need to address illegal, unregulated and unreported (IUU) fishing in the marine areas under the sovereignty or national jurisdiction of small island developing States; strengthening of national, subregional and regional capacity for negotiating fishing agreements and for the promotion, assessment and monitoring of commercial investment in sustainable fisheries, including catching, processing and marketing, as well as, where appropriate, environmentally sound methods of aquaculture to increase ownership and management capacities of commercial fisheries activities by small island developing States communities; greater regional coordination in management and monitoring, control and surveillance, including vessel monitoring systems and enforcement, consistent with international agreements; and assistance to small island developing States in assessing the impact of land-based sources of marine pollution and developing mechanisms to eliminate or minimize pollution sources and participate in the implementation of the Programme of Action.

99. Concerning the transboundary movement of hazardous and radioactive wastes, the Commission recalled the provisions of paragraph 24, C (iii) of the Barbados Programme of Action and reaffirmed that implementation of the relevant paragraph shall be consistent with international law including UNCLOS and other relevant existing international legal instruments. It took into account the views and concerns of small island developing States that such transboundary movement was not adequately covered in the existing international legal regimes, in particular safety measures, disclosure, liability and compensation in relation to accidents, and remedial measures in relation to contamination from such wastes. It also called upon States and relevant international organizations to continue to address those concerns in a specific and comprehensive manner and called upon the Secretary-General to report to the General Assembly no later than at its fifty-sixth session on the efforts and measures undertaken and progress achieved. The efforts to implement the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal were to be continued as well.

100. The Commission further emphasized that action was needed to sustain healthy reefs. Such action would build on the International Coral Reefs Initiative and global reef assessments to ensure food security and fish stock replenishment and would provide a focus for implementation of the Jakarta Mandate on Coastal and Marine Biodiversity, including marine protected areas and the Global Programme of Action.

B. Landlocked and geographically disadvantaged States

101. The provisions of Part X of UNCLOS are among the most important sources of international law governing the access of landlocked States to and from the sea and the freedom of transit. Part X frequently serves as a point of reference during negotiations by landlocked and transit States of specific agreements on terms and modalities for such transit. In this context, it should be noted that only 10 out of 28 landlocked developing countries which generally face severe transit transport problems have ratified UNCLOS or acceded to it.

102. In a further reaffirmation of the right of access of landlocked countries to and from the sea and freedom of transit through the territory of transit States, the General

Assembly at its fifty-third session focused on the transit environment in the landlocked States in Central Asia and their transit developing neighbours. The report prepared by UNCTAD (A/53/331, annex) highlighted the problems of transit transport in that region against the background of economic recovery and the emerging trade and transit patterns. The General Assembly, noting a number of important developments (e.g., the signing of a transit transport framework agreement among States members of the Economic Cooperation Organization at Almaty on 9 May 1998; the signing of the Tashkent Declaration on the United Nations special programme for the economies of Central Asia by the heads of State of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, the Economic Commission for Europe and the Economic and Social Commission for Asia and the Pacific on 26 March 1998 (A/53/96, annex II); the implementation of the expanded Transport Corridor-Europe-Caucasus-Asia programme; and the signing of the Baku Declaration (A/C.2/53/4, annex) on 8 September 1998, adopted resolution 53/171 of 15 December 1998, in which the Assembly, *inter alia*, invited UNCTAD and the Governments concerned to continue elaborating a programme for improving the efficiency of the current transit environment in the newly independent and developing landlocked States in Central Asia and their transit developing neighbours.

103. In the same resolution, the General Assembly also invited UNCTAD, in close cooperation with the regional economic commissions and other relevant international organizations, to provide technical assistance and advisory services to the newly independent landlocked States in Central Asia and their transit developing neighbours, taking into account the relevant transit transport agreements. It called upon the United Nations system to continue studying, within the scope of the implementation of the resolution, possible ways of promoting more cooperative arrangements between landlocked States in Central Asia and their transit developing neighbours, and to encourage a more active supportive role on the part of the donor community.

104. Pursuant to General Assembly resolution 52/183 of 18 December 1997, a meeting of governmental experts from landlocked and transit developing countries and representatives of donor countries and financial and development institutions was convened in New York from 24 to 26 August 1999 to review progress in the development of transit systems, including sectoral aspects, and to assess transit transportation costs, with a view to exploring the possibility of formulating necessary action-oriented measures. The documents before the meeting (TD/B/LDC/AC.1/13 and TD/B/LDC/AC.1/14) contained an appraisal of the progress made in the number of countries that had acceded to international conventions and concluded regional and bilateral agreements. It was observed that the newly independent landlocked developing countries of Central Asia had acceded to many international conventions and had also signed or adopted many regional agreements or arrangements.

105. The meeting called upon countries bordering each transit route to consider concluding bilateral or subregional intergovernmental agreements regarding various aspects of transit transport. The meeting also encouraged universal accession to international conventions relevant to transit trade by landlocked and transit developing countries (TD/B/LDC/AC.1/L.5, para. 7).

106. In other developments, a number of important agreements on transport and communication were signed between Bolivia and Argentina in 1998; India and Nepal in January 1999 extended the validity of the existing treaty on transit with modifications; and an agreement on road transport was signed between the Government of the Lao People's Democratic Republic and the Government of Thailand on 5 March 1999.

107. The thirty-second Association of South-East Asian Nations (ASEAN) Ministerial Meeting and the sixth ASEAN Regional Forum (ARF) meeting in Singapore in July 1999, attached importance to the development of an east-west corridor from north-eastern Thailand through the Lao People's Democratic Republic and Cambodia to Viet Nam. Some of the efforts in the development of this corridor are focused, with assistance from the Asian Development Bank, on the west-east transportation corridor between the Lao People's Democratic Republic, Thailand and Viet Nam, which would provide the Lao People's Democratic Republic with access to seaports in central Viet Nam.

108. With respect to geographically disadvantaged States, it should be noted that Croatia and Bosnia and Herzegovina, taking into account the provisions of UNCLOS, signed on 22 November 1998 the Agreement on Free Transit through the Territory of Croatia to and from the port of Ploče and through the Territory of Bosnia and Herzegovina in Neum (A/53/702-S/1998/1118, annex II) (see also para. 46 above).

V. Shipping industry and navigation

A. Shipping industry

109. International shipping is one of the three pillars of the maritime transport sector, which registered its twelfth year of consecutive growth in 1997, with seaborne trade reaching a record high of 4.95 billion tons. Overall tonnage supply exceeded demand by only 3.7 per cent, representing a new record low. Growth rates in world seaborne trade for 1998 and 1999 are not expected to be as high as a result of the world economic downturn and the subsequent decline in growth in the volume of global trade. The other two pillars of the maritime transport sector are maritime auxiliary services and access to and use of port facilities. All three segments are vulnerable to the Y2K problem and are in the process of addressing it.

1. World merchant fleet: growth, ownership and registration

110. At the end of 1997, the world merchant fleet had reached 775.9 million deadweight tons, representing a 2.3 per cent increase over 1996. The combined tonnage of oil tankers and dry bulk carriers continued to dominate the world fleet, representing 71.3 per cent of total tonnage in 1997. According to Lloyds Register world fleet statistics for 1998, the 10 fastest-growing fleets, i.e., those of over half a million gross tons in size, were Cayman Islands, Cambodia, Belize, Antigua and Barbuda, Kuwait, Madeira (Portugal), United Kingdom, Germany, Canary Islands (Spain) and Qatar.

111. The distribution of world tonnage ownership by groups of countries of registration has changed considerably over the past 17 years. The share of world tonnage of the developed market-economy countries decreased from 51.7 per cent in 1980 to 27.4 per cent in 1997, while the share of the major open-registry countries increased from 27.6 per cent to 44.1 per cent over the same period. Developing countries have also increased their share of world tonnage, from 10.8 per cent in 1980 to 19.1 per cent in 1997, with Asia accounting for 70.2 per cent of the developing countries' total. The share of world tonnage of the Eastern European countries has decreased from 7.7 per cent in 1980 to 5.2 per cent in 1997, and that of the socialist countries of Asia has increased from 1.8 per cent to 3.4 per cent during the same period (UNCTAD Review of Maritime Transport 1998, table 13).

112. The major owners of world tonnage are, with the exception of Greece, the major trading nations. More than half of the world's merchant fleet deadweight tonnage (58.8 per cent) is not registered in the countries of domicile of the parent enterprises, i.e., the countries where the controlling interest of the fleet is located. In 1997, the seven major open-registry countries were Panama, Liberia, Cyprus, Bahamas, Malta, Bermuda and Vanuatu. In each of those countries, except for Cyprus, the share of tonnage owned by their nationals and registered in their country was minimal or zero. In Cyprus, it was 2 per cent at the end of 1997. By contrast, the share of national ownership in international ship registries like the Norwegian or Danish ship registry was 86.9 per cent and 96.2 per cent, respectively.[12]

2. Ageing world fleet

113. A considerable number of vessels, in particular large bulk carriers and tankers originating from the building boom of the early to mid-1970s, are already 25 years old or approaching that age. The owners of such vessels are required by the International Convention for the Safety of Life at Sea (SOLAS), chapter XII, which entered into force in 1999 (see para. 129), or regulation 13 of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), depending on whether the vessel is a bulk carrier or oil tanker, to implement major structural changes. It is expected that the considerable costs related to the enforcement of stricter requirements as well as the recent decrease in freight rates will result in many ships being sent for demolition over the next few years.

3. Decommissioning/recycling/scrapping of ships

114. The projected increase in the number of ships being sent for scrapping, primarily for their recyclable steel content, and the poor human health and environmental conditions at some of the major scrapping sites has focused public attention on an industry which has traditionally been self-regulating. Ship scrapping is an extremely labour-intensive industry, which historically had been based in the industrialized world and in the early 1980s shifted to developing countries in Asia, where labour costs are lower and environmental and occupational rules are less rigorously applied. The leading countries at present are India and Bangladesh, which handle approximately 68 per cent of the deadweight scrapped in the last two years (1997-1998), and Pakistan and China, which handled another 22 per cent. It has been noted that the current slump in demand for steel scrap, coupled with a glut of tonnage coming onto the market, may in the future result in owners having to pay to demolish their old vessels. This development may lead to an increase in the number of incidents involving scuttling of

vessels (see *Baltic and International Maritime Council (BIMCO) Bulletin*, vol. 94, No. 1, February 1999). Similarly, it was also pointed out at the meeting of the Scientific Group of the Consultative Meeting of Contracting Parties to the London Convention, in May 1999, that increased environmental and safety standards for scrapping of vessels could raise the costs to shipowners and might lead to an increase in dumping of decommissioned vessels rather than scrapping (LC/SG 22/13, paras. 3.26-3.27).

115. Today most ships sold for scrapping are sold "as is". They contain a wide variety of wastes, both from their operations and from their basic construction, and may contain several environmentally hazardous substances such as asbestos, polychlorinated biphenyls (PCBs), heavy metals, hydrocarbons, ozone-depleting substances as well as others. Reports on the conditions at the majority of the world's scrapping locations clearly indicate that both the working environment and the environmental conditions give rise to grave concern. No adequate procedures for handling hazardous substances have been documented, the working conditions and the lack of personnel protection lead to a high number of injuries and fatalities among workers, reception facilities for environmental hazardous wastes are rare or not present at all and water, soil and air pollution is observed at the scrapping location.

116. Calls for global safety and environmental measures have recently been made at a number of forums; for example, a global Ship Scrapping Summit (later renamed Ship Recycling Summit) was held in June 1999 with the aim of raising awareness and recommending action.

117. In response to the above concerns, the fourth session of the Open-ended Ad Hoc Committee for the Implementation of the Basel Convention (Geneva, June 1999) prepared a draft Decision on Dismantling of Ships for consideration by the fifth meeting of the Conference of Parties to be held in December 1999. The draft decision requests the Conference of the Parties to give a mandate to the Technical Working Group under the Basel Convention: (a) to collaborate with the appropriate IMO body on the subject and to prepare guidelines for the environmentally sound management of the dismantling of ships, and (b) to discuss, together with the Consultative Sub-Group of Legal and Technical Experts, the legal aspects under the Basel Convention relating to the issue of full and partial dismantling of ships. The draft decision further requests the two groups to report to the Conference of Parties at its sixth meeting on how the issue should be finally resolved.

118. The Commission on Sustainable Development noted in paragraph 35 (h) of its decision 7/1 that the scrapping of ships presents an issue of concern with regard to the pollution of the marine environment. It called upon IMO to look into the issue and encouraged States to ensure that responsible care is applied with regard to the disposal of decommissioned ships, taking into account the need to provide adequate expertise and resources to developing countries.

119. Discussions in IMO on the issue centred around proposals submitted by Norway (MEPC 43/18/1 and Corr.1), Denmark (MEPC 43/18/9), Greenpeace International and the International Confederation of Free Trade Unions (ICFTU) (MEPC 43/18/6) that scrapping of ships should be included in the work programme of the Marine Environment Protection Committee and that IMO should deal with the issue in coordination with other relevant international organizations, including the secretariats of the Basel Convention and the London Convention. Those who did not support the inclusion of the item on the work programme pointed out that once a ship was taken out of service and removed from the register it was no longer a "ship". Ship scrapping was basically an onshore industry, with the main concern being the health and safety of ship-breaking workers, which in their view was outside the purview of IMO.

120. The Committee, recognizing that more information was needed, decided to include the issue as an agenda item on its work programme and invited Norway and other interested members to provide more information at the next session of the Committee, particularly on how the matter should be handled by IMO (see MEPC 43/21, paras. 18.5-18.15).

B. Navigation

121. The importance of the conditions to ensure safe navigation, such as adequately manned ships, a trained crew on board, proper stowage of cargo, safe routes for navigation, efficient communication systems and a crime-free environment (discussed in the section on crimes at sea; paras. 208-243), has led to their regulation at the global level. Flag States are required to implement and enforce against ships flying their flag or of their registry what has become a substantial body of law. Coastal States in turn have taken on the responsibility of ensuring that routes within their maritime zones are safe for navigation. Effective implementation and enforcement of the body of law that governs all aspects of navigation is of fundamental importance not only for the safety of navigation, but also for the protection and preservation of the marine environment.

122. IMO has placed considerable emphasis in its work on the achievement of the above objectives. While recent efforts of IMO in the strengthening of flag State implementation are dealt with further on in this section (see paras.181-189), it can be noted here that there is an increasing tendency to assign to IMO an oversight function, not only with respect to safety matters but also in other areas, i.e., dumping (see para. 389). These new functions mirror what has recently been implemented for the aviation sector. The safety oversight programme for the aviation sector operated by the International Civil Aviation Organization (ICAO), which became mandatory as from 1 January 1999, comprises regular mandatory, systematic and harmonized safety audits for all ICAO member States. Indeed, recent developments in other areas of IMO's work suggest that there is an increasing tendency to follow the practices of the aviation industry (regarding ship reporting, see paras. 158-159, and regarding liability, see para. 443).

1. Safety of ships

123. UNCLOS balances the rights of the flag State to exercise exclusive jurisdiction over ships flying its flag and to enjoy rights of navigation in the maritime zones of the coastal States with the duty to effectively exercise jurisdiction and control in administrative, technical and social matters over ships flying its flag. The flag State, in its exercise of its jurisdiction, must take such measures as are necessary to ensure safety at sea with regard, *inter alia*, to the construction, equipment and seaworthiness of ships, and the manning of ships, labour conditions and the training of crews (see article 94, paragraphs 3, 4 and 5).

124. Under article 217 (2) of UNCLOS, a flag State shall ensure that vessels flying its flag or of its registry are prohibited from sailing until they can proceed to sea in compliance with the requirements of the international rules and standards established through the competent international organization for the prevention, reduction and control of pollution of the marine environment from vessels, including those on the design, construction, equipment and manning of vessels. Thus, flag State jurisdiction should be exercised not only for the purposes of safety, but also to ensure the protection and preservation of the marine environment.

(a) Ship construction, equipment and seaworthiness

125. The generally accepted international regulations, procedures and practices governing ship construction, equipment and seaworthiness which States are required by article 94 and other provisions of UNCLOS to observe are basically those contained in SOLAS, the Load Lines Convention and MARPOL 73/78 (for oil tanker design). Construction and equipment requirements for the safety of fishing vessels are contained in the 1977 Torremolinos Convention as amended by the 1993 Protocol.

126. In view of their obligations under UNCLOS and other relevant IMO conventions, States are advised of the following new requirements regarding ship construction, equipment and seaworthiness, which became applicable in 1999:

127. *Oil tankers*. New Regulation 25 A to annex I of MARPOL 73/78, which was adopted in September 1997, and specifies intact stability criteria for double hull tankers, entered into force on 1 February 1999.

128. *Passenger ships*. IMO reported that amendments to SOLAS chapter II-1, which were adopted by resolution MSC.65(68) in 1997, entered into force on 1 July 1999. New Regulation 8-3 on "Special requirements for passenger ships, other than ro-ro passenger ships, carrying 400 persons or more", effectively makes these ships comply with the special requirements for ro-ro passenger ships in Regulation 8-2 which were adopted in November 1995. The special requirements are aimed at ensuring that the ships can survive without capsizing with two main compartments flooded following damage.

129. *Bulk carriers*. IMO reported that chapter XII of SOLAS, adopted by the Conference of Contracting Parties on 27 November 1997 (see also A/53/456, paras. 168-170), had entered into force on 1 July 1999. This means that all new bulk carriers 150 metres or more in length (built after 1 July 1999) carrying cargoes with a density of 1,000 kilograms per cubic metre and above should have sufficient strength to withstand flooding of any one cargo hold. The date of application of the new chapter to existing bulk carriers depends on their age: the older the bulk carrier, the earlier the date of application.

130. The Global Maritime Distress and Safety System (GMDSS) is a worldwide network of automated emergency communications for ships at sea. The phase-in period for implementing the requirements for GMDSS contained in chapter IV of SOLAS, which were adopted in 1988 and entered into force in 1992, ended on 1 February 1999. IMO noted that, as from that date, the system should be implemented worldwide by all States parties to SOLAS. All ocean-going passenger and cargo ships, including cargo ships of 300 gross tonnage and upwards, must now be equipped with radio equipment that conforms to international standards set out in the system. The equipment requirements vary according to the sea area in which ships

operate: ships travelling to the high seas will need to carry more communications equipment than those remaining within reach of specified shore-based radio facilities. However, all ships must carry equipment designed to improve the chances of rescue following an accident, such as satellite emergency position-indicating radio beacons and search-and-rescue radar transponders for the location of the ship or survival craft.

131. GMDSS also provides for the dissemination of maritime safety information, including navigational and meteorological warnings. The World Meteorological Organization, which coordinates and regulates the preparation and dissemination on a global basis of meteorological forecasts and warnings in support of the safety of life at sea, noted that the new WMO marine broadcast systems for GMDSS had been fully implemented by late 1998, prior to the final implementation date for GMDSS, and currently provides complete global coverage of meteorological information for maritime services.

132. As regards future requirements for the installation of navigational systems and equipment, attention is drawn to the comprehensive revision of SOLAS, chapter V, under consideration in the Subcommittee on Safety of Navigation (NAV). The revised chapter would add nearly twice as many regulations as provided by the existing one. New requirements for the installation of navigational systems and equipment, such as the Global Navigation Satellite System (GNSS), the Electronic Chart Display and Information System (ECDIS), the Automatic Identification System (AIS) and the Voyage Data Recorder (VDR), will incorporate the rapid advances in technology which have been made since 1981 (the last time major new requirements concerning the carriage of shipborne navigational equipment were adopted). One of the outstanding issues which the Subcommittee will have to resolve is which ships will be exempted from the scope of application of chapter V. Some delegations prefer to see the sovereign immunity provisions of UNCLOS reflected in the new text (see A/52/487, para. 108).

Harmonized system of survey and certification

133. IMO explained that each of the SOLAS, Load Lines and MARPOL Conventions requires the issuing of certificates to show that the requirements under it have been met. This has to be done by means of a survey, which can result in the ships being out of service for several days. However, the dates of the required survey under each Convention and intervals between such surveys do not always coincide. As a result, ships may have to go into a port or a repair yard for a survey required by one convention shortly after doing the same thing in connection with another instrument. The harmonized system of survey and certification (HSSC system), which was introduced in the three Conventions through a set of amendments in 1988 and 1990, i.e., the 1988 Protocol to SOLAS, the 1988 Protocol to the Load Lines Convention and the 1990 amendments to MARPOL adopted by resolution MEPC.39(29),[13] consists of a set of regulations which simplify and harmonize the survey requirements and enable them to be carried out at the same time. The conditions for the entry into force of the 1988 Protocols were met on 2 February 1999 and will enter into force on 3 February 2000, together with the 1990 MARPOL amendments. By enabling the required surveys to be carried out at the same time, the HSSC system will reduce costs for shipowners and administrations alike.

(b) Manning of ships and training of crews

134. Most accidents at sea are caused by human error. Therefore efforts to improve safety at sea have focused, *inter alia*, on improving training and certification standards, tackling fatigue and ensuring that new technology is developed with safety in mind.

Manning of ships

135. The manning standards referred to by UNCLOS under article 94 and article 217, paragraph 2, are those contained in SOLAS, which imposes a general obligation on flag States to ensure the appropriate manning of the ship; an appropriate certificate serves as evidence that this has been done.

136. The IMO Assembly at its 21st session, in November 1999, will be considering a draft resolution on principles of safe manning together with associated guidelines and a model form which should be used when issuing a minimum safe manning document under regulation V/13(b) of SOLAS. The draft resolution urges port States to regard compliance with the minimum safe manning document as evidence that the ship is safely manned (see MSC 71/23/Add.1, annex 9).

Training requirements

137. The requirements regarding the training of crews which the flag State must implement under article 94 of UNCLOS are those contained in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and the STCW Code. Part A of the Code is mandatory, Part B recommendatory.

138. Developments since last year's report include the entry into force on 1 January 1999 of the 1997 amendments to the STCW Convention and its Code, which were adopted by

resolutions MSC.66(68) and MSC.67(68) and concern mandatory minimum requirements for the training and qualifications of masters, officers, ratings and other personnel on both ro-ro and other passenger ships.

139. The Maritime Safety Committee at its seventieth session (December 1998) adopted amendments to Part A of the STCW Code concerning cargo handling and stowage at the operational and management levels (resolution MSC.78(70)). The amendments are expected to enter into force on 1 January 2003.

140. As regards progress by Governments in implementing the requirements of the STCW Convention and its Code, two developments should be noted:

141. As of 1 August 1998, 82 out of 133 parties had communicated information to the IMO secretariat. This date is stipulated in the STCW Convention for the submission to IMO of information by the parties regarding the administrative measures they have taken to ensure compliance with the STCW Convention. As of 21 May 1999, a further 13 parties had submitted the required information. A report containing the evaluation of those submissions by panels of competent persons will be presented to the Maritime Safety Committee at its seventy-second session, in 2000.

142. Concern has been expressed in IMO over recent attempts to undermine the role of the certificates of competency as the basic control provision of the STCW Convention (article VI requires certificates of competency to be issued only to those that meet the requirements of the STCW Convention). Port State control inspections and applications for recognition of certificates have uncovered an increasing practice of counterfeiting, forging or fraudulently obtaining certificates of competency and endorsements. The potential hazards and consequences to maritime safety and the marine environment posed by inadequately trained seafarers using fraudulently obtained certificates requires urgent attention. The Maritime Safety Committee at its seventy-first session approved for submission to the IMO Assembly a draft resolution entitled "Unlawful practices associated with certificates of competency and endorsements".

(c) Labour conditions

143. The International Labour Organization reported that no major ILO maritime-related meetings had taken place between June 1998 and June 1999. However, active preparation had begun for two meetings scheduled later in 1999: the Joint IMO/ILO Ad Hoc Expert Working Group on Liability and Compensation regarding Claims for Death, Personal Injury and Abandonment of Seafarers, 11-15 October 1999 (see A/53/456, paras. 175-180); and a Tripartite Meeting on Safety and Health in the Fishing Industry, to meet from 13 to 17 December 1999, to evaluate the work of the Joint FAO/ILO/IMO Working Group on Fishermen's Training on the revision of the Document for Guidance on Fishermen's Training and Certification (see also IMO document MSC 71/23, paras. 6.18-6.22) and to adopt conclusions identifying the follow-up activities and reviewing ILO standards specifically adopted for fishermen.

2. Transport of cargo

144. It has been estimated that, according to IMO criteria, more than 50 per cent of packaged goods and bulk cargo currently transported by sea can be regarded as dangerous, hazardous or harmful to the environment. It is therefore important that this cargo should be handled, transported and stored with the greatest possible care.

145. SOLAS, chapter VII, prohibits the carriage of dangerous goods by sea except when they are carried in accordance with the provisions of the Convention and requires each Contracting Government to issue, or cause to be issued, detailed instructions on safe packing and stowage of dangerous goods which shall include the precautions necessary in relation to other cargo.

146. Several IMO codes also deal with the carriage of dangerous goods: International Maritime Dangerous Goods (IMDG) Code; International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code); Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code); International Code for the Construction and Equipment of Ships Carrying Liquified Gases in Bulk (IGC Code); Code for Safe Practice for Solid Bulk Cargoes (BC Code); and Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-level Radioactive Waste in Flasks on Board Ships (INF Code). SOLAS chapter VII provides for the mandatory application of the IBC and IGC codes, and most recently also the INF Code (see para.150). The IBC and BCH codes are mandatory under MARPOL 73/78.

147. Amendments to the IBC Code and the BCH Code were adopted in 1999 at the forty-third session of the Marine Environment Protection Committee of IMO by resolutions MEPC.79(43) and MEPC.80(43), respectively.

148. The International Atomic Energy Agency reported that the recommendations on "The Physical Protection of Nuclear Material and Nuclear Facilities" had been revised in 1998 and published by IAEA in 1999 as INFCIRC/225/Rev.4.

149. Guidance contained in the recommendations includes specific requirements for the physical protection of nuclear material during transport by sea. The revised recommendations strengthened the requirements for the transport of significant quantities of nuclear materials by ship. For example, quantities greater than 2 kg of plutonium will have to be carried on a dedicated transport ship. Other changes relate to upgraded response capabilities, including improved communications and the need for a dedicated transport control centre.

Carriage of irradiated nuclear fuel, plutonium and high-level radioactive waste

150. IMO reported that the Maritime Safety Committee at its seventy-first session in 1999 had adopted amendments to SOLAS chapter VII by resolution MSC.87(71) aimed at making the INF Code mandatory. These SOLAS amendments and the Code are expected to enter into force on 1 January 2001 (see MSC 71/23/Add.1, annexes 3 and 4). The INF Code, which applies to all ships, including those of less than 500 gross tonnage, sets out how materials covered by the Code should be carried, including specifications for ships.

151. An informal inter-agency group, comprising IMO, IAEA and UNEP, has been established to evaluate the potential hazards of radioactive material in the environment. The Group will present a report to the IMO Marine Environment Protection Committee at its forty-fourth session in 2000. In 1999, all of the IMO committees decided not to pursue the discussions on the issue of prior notification and consultation at the current stage.

152. Recent protests and actions taken by coastal States in response to the resumed shipments of INF materials indicate that those States do not believe that the current legal regime sufficiently protects their interests. Unwilling to be used as transit States, a number of such States strongly advised INF carrying ships against navigating in their exclusive economic zones. Some regions are considering similar measures. For example, the Caribbean Community (CARICOM), at its twentieth regular session, in July 1999, expressed concern at the shipment of 450 kilograms of plutonium via routes traversing the Caribbean; recalling its past appeals to the Governments of France, the United Kingdom and Japan, CARICOM expressed its outrage at the "callous and contemptuous disregard of such appeals by those Governments" and vowed to take all necessary steps to protect their people and the fragile ecology of the Caribbean Sea from this highly dangerous threat to which they were now habitually exposed. These shipments have, *inter alia*, prompted the Caribbean States to declare the Caribbean Sea a special area in the context of sustainable development (see also para. 506).

153. A call for strengthening the regulations governing the transportation of radioactive wastes and spent fuel was made at the 1999 session of the Disarmament Commission in the context of the discussions of its Working Group I on the "Establishment of nuclear-weapon-free zones on the basis of arrangements freely arrived at among the States of the region concerned" (A/CN.10/1999/WG.I/WP.1). The final text as adopted by the Commission notes that nuclear-weapon-free zones may also serve to promote international cooperation aimed at ensuring that the regions concerned remain free of environmental pollution from radioactive wastes and other radioactive substances and, as appropriate, enforcing internationally agreed standards regulating international transportation of these substances (A/54/42, annex I, para. 17).

154. The right of States to prohibit the transboundary movement of hazardous and radioactive wastes and materials within their jurisdictions consistent with international law was raised by some delegations at the seventh session of the Commission on Sustainable Development both in the context of the review of oceans and seas and the review and appraisal of the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. Some delegations urged the continuation of efforts to ensure that transboundary movements of such materials was undertaken in a safe and secure manner and indicated support for the call for States that had not done so to become parties to and implement the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management[14] and to consider making the INF Code a mandatory instrument. In its decision 7/1 on oceans and seas the Commission noted that it was not able to reach a consensus on these proposals. Nor did an agreed text emerge from the discussions at the seventh session on the review and appraisal of the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States.

155. The outcomes of the twenty-second special session of the General Assembly for the review and appraisal of the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States are reflected in paras. 94 to 100 above.

3. Safety of navigation

156. UNCLOS set out in general terms the applicable rights of passage and corresponding duties of ships in the various

maritime zones, while detailed rules governing the safety of navigation and the prevention of collisions at sea — with which compliance is required by UNCLOS — have been developed by IMO. SOLAS chapter V and the International Regulations for Preventing Collisions at Sea constitute the main instruments in that regard.

157. While the enforcement of IMO regulations concerning ship construction, equipment, manning and training of crew (see paras. 125-142), relies primarily on the exercise of flag State jurisdiction, such is not the case when the ship is navigating in the maritime zones of other States. In this case, enforcement of regulations governing such issues as signals, communications, prevention of collisions and ships' routeing relies on the effective exercise of both flag and coastal State jurisdiction.

158. All major amendments to SOLAS since 1991, including its chapter V, were aimed at enhancing the role of the coastal State in regulating navigation, through the introduction of mandatory ship reporting systems or mandatory ship routeing systems, or through vessel traffic services. The trend is likely to continue in the future (see MSC 71/20/12; also see MSC 71/23, para. 20.30).

159. The future of the shipping industry is projected to become more like the aviation industry, with shore-based control functioning in a similar manner to modern air traffic control and ship masters being treated in a manner similar to airline pilots (keynote speech by the Secretary-General of IMO at a seminar on "Coordination of Vassel Traffic Service (VTS) Standards in the United Kingdom", London, 12 May 1999).

(a) Routeing measures

160. MSC adopted, subject to confirmation by the IMO Assembly in November 1999, the addition of a new paragraph to section 6 of the General Provisions on Ships' Routeing (Assembly resolution A.572(14) as amended), which provides that traffic separation schemes shall be designed so as to enable ships using them to fully comply at all times with the International Regulations for Preventing Collisions at Sea (see report of the seventieth session of MSC, MSC 70/23/Add.2, annex 15).

161. Since last year's report (A/53/456, paras. 183-186), the following routeing measures have been adopted by MSC: a new area to be avoided in the Dover Strait (see ibid., para. 187) and amendments to the Marjan/Zuluf Traffic Separation Scheme and associated routeing measures proposed by Saudi Arabia. The Committee also approved the proposal by South Africa to abolish the area to be avoided around the Alphard Banks (see MSC 70/23/Add.2, annexes 13 and 14).

162. New proposals for routeing measures submitted to the Subcommittee on Safety of Navigation (September 1999) include a proposal by China for a mandatory ship routeing system and ship reporting system in the waters off Chengshan Jiao Promontory (NAV 45/3/3) and a proposal by the United States for the adoption of recommended tracks off the California coast in order to shift the existing traffic flow of commercial ships carrying cargo of hazardous materials and commercial ships of 500 gross tonnage seaward to beyond the territorial sea (NAV 45/3/4).

163. *Strait of Istanbul, Strait of Çanakkale and Marmara Sea.* IMO reported that MSC at its seventy-first session had decided to endorse the recommendation of the majority of the members of the Working Group on Ships' Routeing that the discussions on safety of navigation and environmental protection, including the review of the IMO Rules and Recommendations on Navigation through the Strait of Istanbul, the Strait of Çanakkale and the Marmara Sea should be discontinued. The following grounds were given for its decision: "(1) the existing IMO-adopted routeing system had been effective; (2) Turkey was not contemplating an amendment to the existing IMO-adopted routeing system and the associated Rules and Recommendations; (3) the Working Group, after extensive technical discussion, had not reached any firm conclusion that any change would make a clear and definitive contribution to the safety of navigation in the Straits; (4) there was no serious prospect of reaching an agreement on amendment(s) to the existing IMO-adopted routeing system in the near future, as the coastal State saw no need for any amendment(s); and (5) the agreement of the coastal State was required in accordance with section 3.4 of the General Provisions on Ships' Routeing before IMO could adopt or amend any routeing system". The Working Group also recommended that efforts of interested parties should be concentrated on promoting the full and effective use of the reporting system (TUBRAP) and the pilotage services in the Strait of Istanbul, the Strait of Çanakkale and the Marmara Sea; and on implementation, as soon as possible, of a modern vessel traffic service therein (see MSC 71/23, paras. 22.14-22.39; see also para. 169 below).

(b) Ship reporting systems

164. The data provided through ship reporting can be used for search and rescue, vessel traffic services and prevention of marine pollution. To address potential problems associated with Y2K, the Maritime Safety Committee approved a circular inviting ships participating in mandatory

ship reporting systems, when requested to do so, to inform the relevant authorities of the status of year 2000 readiness on the ship (MSC/Circ.894).

165. Ever since regulation 8-1 of SOLAS chapter V entered into force in 1996 and enabled the adoption of mandatory ship reporting systems, a number of such systems have been adopted to help reduce accidents in congested areas and protect the marine environment. The majority of such systems have been adopted for straits used for international navigation. The recent adoption of a system for the Strait of Dover/Pas-de-Calais[15] is the sixth to be adopted for a strait used for international navigation (the others are the Torres Strait, the Great Belt, the Strait of Gibraltar, the Strait of Bonifacio and the Straits of Malacca and Singapore).

166. MSC also recently adopted the first mandatory ship reporting system for the specific purpose of protecting populations of a single marine species, in this case the endangered North Atlantic right whale (see resolution MSC.85(70), annex 1), from the direct physical impacts of ships rather than for the protection of the marine environment from ships (A/53/456 paras. 203-204).

167. Responding to concerns in the Committee that the adoption of the mandatory ship reporting systems to protect single species might lead to a proliferation of such systems in the future, MSC decided that it would only adopt such systems if there was clear scientific evidence that: (a) the population of a marine species was immediately endangered with extinction, (b) major shipping routes passed through an area or areas of habitat critical for the population; and (c) the greatest known threat to the survival and recovery of the population was posed by direct physical impacts of such ships, such as collisions (see MSC 70/23, paras. 11.36-11.42). It may be noted that Canada has recently drawn the attention of the Subcommittee on Safety of Navigation to the problem of collisions between ships and the North Atlantic right whale in the waters of eastern Canada (see NAV 45/INF.3).

168. It is expected that the trend to adopt mandatory ship reporting systems will continue in the future, or at least until most ships have installed Universal Shipborne Automatic Identification Systems (AIS). It is expected that the revised SOLAS chapter V will only require AIS on ships built after the date of its entry into force (envisaged for 1 July 2002).

(c) Vessel traffic services

169. Traffic separation schemes and other ship routeing systems may be combined with a vessel traffic service (VTS), which is a service designed to improve the safety and efficiency of vessel traffic and to protect the environment. SOLAS chapter V regulation 8-2 on vessel traffic services (see A/52/487, para. 127) entered into force on 1 July 1999. IMO explained that regulation V/8-2 provides that a VTS should be designed to contribute to the safety of life at sea, the safety and efficiency of navigation and the protection of the marine environment, adjacent shore areas, worksites and offshore installations from possible adverse effects of maritime traffic. Governments may establish a VTS when in their opinion the volume of traffic or the degree of risk justifies such services. A VTS may only be made mandatory in sea areas within a State's territorial waters. Paragraph 5 of regulation 8-2 provides that nothing therein or the guidelines adopted by IMO (Guidelines for vessel traffic services — IMO Assembly resolution A.857(20)) shall prejudice the rights and duties of Governments under international law or the legal regimes of straits used for international navigation and archipelagic sea lanes.

(d) Provision of services/sharing of costs

170. Some routes used for international navigation are not very safe and/or are very congested and therefore require, for example, the installation and operation of complex and increasingly expensive aids to navigation, or the provision of some other maritime service. The costs of such maritime infrastructure and the provision of services are usually borne by the coastal State concerned. This is also currently the situation in straits used for international navigation. Article 43 of UNCLOS calls for cooperation between user States and States bordering a strait in the establishment and maintenance in a strait of necessary navigational and safety aids or other improvements in aid of international navigation; and for the prevention, reduction and control of pollution from ships.

171. The increase in the volume of traffic, as well as rising capital and operational costs incurred while providing services, has led to recent calls for a legal regime which will provide for the sharing of costs by those that primarily benefit from the services rendered.

172. The States bordering the Straits of Malacca and Singapore have also been considering possible mechanisms consonant with article 43 of UNCLOS, beyond voluntary cooperative arrangements with a single user, e.g., Japan (see A/51/645, paras. 123 and 124) for establishing an international partnership with all users of the Straits and are exploring the creation of a Fund for that purpose. As a follow-up to their 1996 Conference, the Institute of Policy Studies, Singapore, and IMO are convening in October 1999 an International Conference on Navigational Safety and the Control of Pollution in the Straits of Malacca and Singapore.

Funding and Managing International Partnerships. The Division for Ocean Affairs and the Law of the Sea has contributed to the Conference by preparing a panel discussion paper on "Proposed usage and management of the Fund".

173. *North Atlantic Ice Patrol.* SOLAS chapter V regulations 5 (Ice Patrol service) and 6 (Ice Patrol: Management and cost) require Contracting Governments to maintain an ice patrol for the study and observation of ice conditions in the North Atlantic, with those Contracting Governments especially interested in the service agreeing to contribute to the expense involved, contributions being based on the total gross tonnage of vessels passing through the area covered by the Ice Patrol.

174. The North Atlantic Ice Patrol, a service which has operated for the last 70 years under the management of the United States, with capital costs for the infrastructure borne by the United States and Canada, is currently financed through contributions to the cost of the service by 17 States through the Agreement regarding Financial Support of the North Atlantic Ice Patrol.

175. In its discussions on the revision of SOLAS chapter V, the Subcommittee on Safety of Navigation was informed by the United States that the 17 Contracting Governments which contribute to the Ice Patrol comprise only half of the benefiting tonnage. As a result, 65 Contracting Governments were receiving valuable services to which they, or their ships entitled to fly their flag, were not contributing, thereby obtaining an unfair competitive advantage. The recovery of the operating costs, it was pointed out, would not constitute a precedent, as that undertaking was a long-standing legal obligation of States Parties to SOLAS. Some delegations expressed their preference for using the user-pays principle rather than compulsory contributions by Contracting Governments, while others expressed the view that that principle could only be used with the consent of the flag State, since otherwise it might not be in line with the provisions of UNCLOS and the principle of the freedom of navigation. (NAV 44/14, paras. 5.7-5.19)

176. The Maritime Safety Committee at its seventieth session agreed to replace SOLAS regulations V/5 and 6 with a new regulation V/6 and approved new regulations for the management, operation and financing of the North Atlantic Ice Patrol. Both texts will be submitted to the Committee for adoption at the 72nd session. The new regulations are to be adopted as a separate instrument and will become mandatory through the amendment to regulation V/6. Once adopted, they will provide for the recovery of the operating costs from all Contracting Governments to SOLAS and will require each Contracting Government whose ships pass through the region of icebergs during the ice season to reimburse the United States for its proportionate share of the costs for the management and operation of the ice patrol service (see MSC 70/23/Add.2, annex 19).

4. Maritime claims

Arrest of ships

177. On 18 December 1997, the General Assembly, in its resolution 52/182, endorsed the recommendation of the Trade and Development Board of UNCTAD that a diplomatic conference should be convened to consider and adopt a convention on arrest of ships. The United Nations/International Maritime Organization Diplomatic Conference on Arrest of Ships was held at Geneva from 1 to 12 March 1999. On 12 March 1999, the Conference adopted the text of the new International Convention on Arrest of Ships (see A/CONF.188/6).

178. The new Arrest Convention is a result of the review of the 1952 International Convention for the Unification of Certain Rules Relating to the Arrest of Seagoing Ships undertaken jointly by UNCTAD and IMO. It applies to any ship within the jurisdiction of any State party, whether or not that ship is flying the flag of a State party. However, it does not apply to any warship, naval auxiliary or other ships owned or operated by a State and used, for the time being, only on government non-commercial service. The Arrest Convention defines arrest as "any detention or restriction on removal of a ship by order of a Court to secure a maritime claim, but does not include the seizure of a ship in execution or satisfaction of a judgement or other enforceable instrument". The provisions of the Arrest Convention cover practically all maritime liens recognized by the 1993 International Convention on Maritime Liens and Mortgages.

179. The Arrest Convention stipulates that a ship may be arrested only in respect of a maritime claim and not in respect of any other claim and only under the authority of a Court. Subject to its provisions, the procedure relating to the arrest of a ship or its release shall be governed by the law of the State in which the arrest was effected or applied for. Under certain conditions, the new Convention also provides for the recognition and enforcement of foreign judgements. Unlike the 1952 Convention, the new Convention applies to all ships, whether or not they are seagoing and whether or not they are flying the flag of a party. With respect to seagoing ships, it is important to draw the attention of States to the provisions of UNCLOS concerning the innocent passage in the territorial sea and containing rules applicable

to merchant ships and government ships operated for commercial purposes, in particular rules dealing with civil jurisdiction in relation to foreign ships (article 28) which impose certain limitations on the power to arrest. According to those provisions, the coastal State may not arrest the ship for the purpose of any civil proceedings, save only in respect of obligations or liabilities assumed or incurred by the ship itself in the course or for the purpose of its voyage through the waters of the coastal State. This is without prejudice to the right of the coastal State to arrest, for the purpose of any civil proceedings, a foreign ship lying in the territorial sea, or passing through the territorial sea after leaving internal waters.

180. The Arrest Convention is deposited with the Secretary-General of the United Nations and will be open for signature at United Nations Headquarters, New York, from 1 September 1999 to and including 31 August 2000. It will enter into force six months following the date on which 10 States have expressed their consent to be bound by it.

C. Enforcement

1. Flag State implementation

181. The effective implementation by flag States of the obligations they have assumed under a number of instruments relating to the safety of navigation and the protection of the marine environment from vessels has been an issue which has received priority attention within IMO over the last few years. The International Safety Management Code and the work of the Subcommittee on Flag State Implementation represent major initiatives to assist flag States in meeting their obligations.

182. In spite of these actions, there is still clear evidence of the need to improve the implementation of the IMO instruments (see the opening statement of the Secretary-General of IMO at the sixth session of the Subcommittee on Flag State Implementation). Port State control statistics and the economic incentive for owners and operators of substandard ships not to comply, as noted in the study of OECD (see A/51/645, para. 96), clearly demonstrate the need for further measures. Problems experienced with ineffective flag State implementation have also been raised in other forums. The FAO Committee on Fisheries has recently drawn the attention of IMO (MSC 71/10/1) to the problems of reflagging of fishing vessels and ship registration which were in its view relevant to the flag State implementation of IMO Conventions and articles 91 and 94 of UNCLOS (see paras. 256-257 below).

183. Moreover, the Commission on Sustainable Development, in paragraph 35(a) of its decision 7/1, invited IMO as a matter of urgency to develop measures, in binding form where IMO members considered it appropriate, to ensure that ships of all flag States met international rules and standards so as to give full and complete effect to UNCLOS, especially article 91 (Nationality of ships), as well as provisions of other relevant conventions. In that context, the Commission emphasized the importance of further development of effective port State control (see para. 194).

184. Article 91 of UNCLOS requires every State to fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory and for the right to fly its flag. Ships have the nationality of the State whose flag they are entitled to fly. There must be "a genuine link" between the State and the ship. In view of the obligations of flag States under articles 94 and 217 of UNCLOS, the requirement of a genuine link in article 91, while not defined, does imply that the link must be such so as to enable the flag State to exercise effective control over the ship and meet its obligations under UNCLOS and other instruments.

185. It has been observed in the past that some flag States do not effectively enforce the international conventions to which they are a party because they do not exercise control over the ships which they register and/or to which they grant the right to fly their flag. However, it is exactly this lack of control that makes the registers of these flag States very attractive to shipowners of substandard ships and enables them to secure a competitive advantage over their competitors. Some flag States are responding to this problem by making it easier to remove such vessels from their registers. However, this is unlikely to stop those ships from operating since registration under a different flag can be effected with a minimum of formality. Indeed, it is likely to compound the problem, since the removal of such vessels from a register would be likely to occur under pressure of impending port State control detentions and therefore could result in the abandonment of seafarers in foreign ports (see ICFTU submission to the Subcommittee on Flag State Implementation at its seventh session, FSI 7/9). The Subcommittee on Flag State Implementation is considering the implications of a vessel losing the right to fly the flag of a State, from the point of view of both the flag State and the port State (see FSI 7/14, sect. 9).

186. Shipowners in general have demonstrated a marked preference for registering their tonnage under a foreign flag. This ensuing demand has been met by an increase in the number of States offering open registries (see paras. 111-112). It is clear from UNCLOS that the registration of a ship is not just an administrative formality, but entails the

assumption of responsibility on the part of the flag State for ensuring that the ship complies with the applicable international instruments.

187. The Flag State Performance Self-Assessment Form, approved for adoption by the IMO Assembly in November 1999, represents a significant recent measure to deal with the problem of ineffective flag State implementation. The form establishes a uniform set of internal and external criteria which can be used by flag States on a voluntary basis to obtain a clear picture of how well their maritime administrations are functioning and to make their own assessment of their performance as flag States. The flag State will be able to determine its deficiencies and take positive steps to obtain assistance in overcoming them. The form may be submitted to IMO when requests are made for technical assistance; however, this should not be considered a prerequisite for seeking technical assistance.

188. The form covers such issues as asking whether the administration has the necessary laws, infrastructure and human resources in place to implement and enforce international maritime safety and pollution prevention instruments. The draft Assembly resolution urges member Governments to use the Self-Assessment Form for the purpose of identifying their weaknesses, if any, in discharging their responsibilities as flag States. Member Governments are invited to submit copies of completed forms on a voluntary basis to enable the establishment of a database which would assist IMO in its efforts to achieve consistent and effective implementation of IMO instruments (see MSC 71/23/Add.1, annex 11).

189. The Subcommittee on Flag State Implementation began work on drawing up a list of criteria by which flag State performance could be measured and agreed to continue the discussions through a correspondence group in advance of the next session, scheduled for January 2000.

2. Port State control

190. Port State control generally means the right of a State to exercise jurisdiction over vessels entering its ports voluntarily to ensure compliance with the requirements of international maritime conventions adopted through the competent international organization or general diplomatic conference. Under UNCLOS, article 218 allows a port State to institute proceedings, where the evidence so warrants, against a vessel voluntarily within its ports or offshore terminals which has committed discharge on the high seas in violation of applicable international rules and standards established through the competent international organization or general diplomatic conference.

191. Although the primary responsibility for the enforcement of rules and standards rests with the flag State, port State control has been developed as a means of complementing the weakness or the unwillingness of the flag State to fulfil its obligations vis-à-vis vessels flying its flag.

192. Port State control has been widely promoted by IMO, which over the years has encouraged States to initiate regional cooperation for the development of port State control through the adoption of memoranda of understanding on port State control in Europe, Asia and the Pacific, Latin America and the Caribbean, the Mediterranean, the Indian Ocean region and West Africa. It plays an important role in the elimination of sub-standard ships.

193. Success of the port State control concept in ensuring compliance of ships with environmental and safety norms and standards has convinced States to apply port State control in the sphere of conservation and management of living marine resources. The 1995 Agreement on Fish Stocks established that "a port State has the right and the duty to take measures, in accordance with international law, to promote the effectiveness of subregional, regional and global conservation and management measures". Under this approach, a port State would be entitled to inspect all relevant documents, fishing gear and catches on board fishing vessels, to ensure that they were in compliance with conservation and management measures established by subregional and regional fisheries management organizations and arrangements. Such control may include the prohibition of landings and trans-shipments of catches of fishing vessels. Similarly, an increasing number of regional fisheries organizations with regulatory powers have adopted port State control to stem unregulated fishing by fishing vessels of non-member States and entities in their convention areas (see, for example, para. 269).

194. The trend has also been endorsed by the Commission on Sustainable Development in its decision 7/1 in which it emphasized "the importance of further development of effective port State control".

195. In IMO the port State control approach has found acceptance as an effective tool that could ensure effective compliance by ships with norms and standards established in IMO Conventions. It has also enabled IMO to facilitate compliance by ships with several regulations, aimed at implementing IMO Conventions at the global and regional levels.

196. One of these regulations was related to the recent adoption by the IMO Maritime Safety Committee of several amendments to 1995 resolution A.787 (19) on procedures for port State control in respect of ships that are required to

comply with SOLAS 74, the Convention on Load Lines, MARPOL 73/78, STCW 78, and the 1969 International Convention on Tonnage Measurement of Ships (ITC 69).[16] These procedures are considered to be complementary to national measures taken by administrations of flag States and are intended to provide assistance to flag State administrations in securing compliance with convention provisions in safeguarding the safety of crew, passengers and ships, and in ensuring the prevention of pollution. Amendments to resolution A.787 (19) were aimed at updating the resolution through the addition or modification of some provisions of the document with a view to improving implementation of the procedures for port State control. For instance, (a) the definition of detention has been modified to draw particular attention to the fact that the decision by port State control officers (PSCOs) to detain a ship would not be affected by its possible impact on "the normal schedule of departure of the ship" concerned; (b) in addition to inspection of regular certificates and documents of a vessel, inspection of certificates under ITC 69 should be "guided by appendix 4A" dealing specifically with guidelines for port State control under ITC 69; (c) evidence of absence or non-conformity of the ship's logs, manuals or other required documents on board as clear grounds to conduct more detailed inspection was replaced by evidence of absence or non-conformity of "documentation required by the Conventions and listed in appendix 4 (lists of certificates and documents)"of the resolution; (d) where no detention order is issued because the grounds for detention are the results of an accident, the following requirements should be observed: notification to the flag State and the organization responsible for issuing the relevant certificate, report on the circumstances of the accident to the port State authority prior to entering the port, including the damage suffered and information about the required notification of the flag State, adoption of appropriate remedial action by the ship, and completion of the repair of the deficiencies to the satisfaction of port State authority; (e) introduction of a right of appeal by the shipping company or its representative against a detention taken by a port State authority; (f) requirements for bulk carriers and oil tankers to undergo the enhanced programme of inspection during surveys under the provision of regulation XI/2 of SOLAS 74; (g) where there was a doubt that the required survey for bulk carriers and oil tankers had taken place, PSCOs should seek confirmation from the recognized organization.[17]

197. The Maritime Safety Committee also agreed to include in the resolution new sections regarding "suspension of inspection" in exceptional circumstances where the overall condition of a ship is found to be obviously sub-standard and "procedures for rectification of deficiencies and release" of a ship, as well as a new section incorporating the Guidelines for Port State Control related to the International Safety Management Code (ISM). The Code which became mandatory in 1994 by means of amendments to SOLAS 74, requires administrations to issue a document of compliance to every shipping company that meets the standards laid down in the Code for the safe operation of ships and for pollution control. The draft Assembly resolution, including the amendments thereto, would be submitted for adoption to the twenty-first session of the IMO Assembly in November 1999.

198. In addition, IMO issued on 4 June 1999 an MSC circular on guidance for PSCOs in respect of certificates of competency under the STCW Convention (MSC.Circ.918), following reports from member States that a large number of fraudulent certificates of competency were being found during port State control inspections and applications for recognition of certificates. The circular provided the necessary clarifications for the guidance of PSCOs concerning the transitional provisions of STCW 78 (see also para. 142).

Regional port State control cooperation

199. Recognizing that the port State control regime would be more effective when implemented on a regional basis, most of the regions of the world have established or are in the process of establishing regional port State memoranda of understanding (MOUs) (see A/53/456, paras.230-235). In recent years, there has also been important movement in various regions toward establishing a harmonized approach to the effective implementation of the control provisions. The goal is for effective operation and cooperation among port States under regional MOUs to eventually create a global port State control network which would ban sub-standard ships posing threats to the safety of navigation and the protection and preservation of the marine environment.[18]

200. As to developments regarding MOUs, the Paris MOU Port State Control Committee (PSCC) decided in 1998 to provide improved access to information on ship inspections and detentions. The first step was the publication of a list of detained ships on a monthly basis on the Paris MOU Web site, including particulars of the owner or operator of the ship. Each flag State in the list received a letter from the Paris MOU secretariat to inform it that its ships were targeted for priority inspections for a period of one year. At its thirty-second meeting (Stockholm, 10-13 May 1999), Paris MOU PSCC,[19] in order to increase transparency,

decided to make more information available to the public through the European Quality Shipping Information System (EQUASIS), as part of the Paris MOU support for the worldwide Quality Shipping campaign. For 2000, this campaign would include, in the case of detentions, the publication by the Committee of the data concerning the performance of classification societies on the basis of the PSCC criteria of evaluation.

201. With respect to documentation regarding qualifications as well as training of officers and crew on board all types of ships, instructions have been conveyed to PSCOs to use immediately the new guidelines established under the 1995 amendments to STCW 78 and to verify compliance with the Global Maritime Distress and Safety System (GMDSS) bearing in mind that the final date for conversion to the system was 1 February 1999. However, since some flag States had issued exemption certificates for their vessels on the ground of non-availability of equipment, such exemptions would not be accepted in the Paris MOU region after 1 August 1999. In addition, the Committee agreed to undertake another concentrated inspection campaign on ISM Code matters starting 1 July 2002, when all ships would be required to comply with the provisions of the Code, and as part of the concentration inspection regime it was agreed that the securing of cargo would be the subject of a concentrated inspection campaign commencing in September 2000. In view of the importance of the Y2K issue, PSCOs would be also required to request shipmasters to show evidence of Y2K preparedness, including the ability of the crew to use back-up systems.

202. As for the Asia-Pacific region, the PSCC of the Tokyo MOU met at Cairns, Australia, from 26 to 29 April 1999 for its seventh session during which it approved the 1998 annual report on port State control for the region.[20] According to the report, a total of 14,545 inspections had been conducted during the period by the member authorities of the Tokyo MOU on ships registered under 104 flag States. Against a total of 24,266 foreign ships operating in the region, the inspection rate was estimated at 60 per cent. These inspections resulted in the detention of 1,061 ships registered under 62 flag States.

203. The PSCC of the Tokyo MOU also adopted an amendment to the memorandum of understanding to include the 1988 SOLAS and LL Protocols as relevant instruments for MOU members. The amendment would come into force on 3 February 2000, the same date as the entry into force of the two Protocols. In addition, the Committee expressed satisfaction with the results of the 1998 concentrated inspection campaign on ISM Code matters and decided to undertake a detailed study of the report of the campaign in order to identify any further actions or measures to be taken regarding implementation of the Code. In order to facilitate the implementation of GMDSS, the Committee decided to conduct another concentrated inspection campaign on GMDSS. For this purpose, guidelines would be provided to PSCOs and a checklist for use during the campaign would be prepared to ensure that a uniform approach was applied within the region. Guidelines would also be provided for port State control in relation to the Y2K problem.

204. In the region of Latin America and the Caribbean, the fifth meeting of the Committee of the Latin American Agreement on port State control (Viña Del Mar Agreement) was held at Havana from 23 to 25 September 1998. Among various topics, the most important issue discussed was ISM Code compliance. A correspondence group was established to develop appropriate procedures on the issue. Discussions were also held on the revision of the Guide for Inspectors which is annexed to the Agreement, and on a review of the progress and implementation of training for PSCOs. The Committee also adopted complementary measures for dealing with ships which did not fully rectify deficiencies at the port of inspection.[21]

205. In the Caribbean region, the third meeting of the Caribbean MOU port State control was held at Nassau, Bahamas, on 15 and 16 October 1998. A project for upgrading the maritime legal and administrative regimes of member States in support of the implementation of a system of port State control in the Caribbean was conducted and a primary report was submitted to the meeting for consideration.[22]

206. At its second meeting, held at Istanbul, from 14 to 16 October 1998, the most important issues discussed by the PSCC of the Mediterranean MOU were administrative arrangements for the implementation of the MOU, an action plan for training in the areas of port State control and flag State responsibilities, as well as the establishment of an information centre.[23]

207. The Indian Ocean MOU on port State control, which had been finalized in June 1998 (A/53/456, paras. 230-231), has established an interim secretariat and an interim information centre in Goa, India, and in Pretoria, South Africa, respectively. The first meeting of the Indian Ocean MOU PSCC was held in early 1999.[24]

VI. Crimes at sea

208. The concept of maritime security encompasses not only traditional military security but also resource and

environmental security, as well as security against crimes at sea. This recent development has placed an increased demand on the enforcement capacity of States and constitutes a challenge which most States, especially developing and small island States, have not been able to meet by themselves.

209. Many States either have concluded or are considering concluding bilateral, multilateral and regional maritime cooperation agreements to combat and suppress crimes at sea. The scope of these agreements is often extended to reflect a more comprehensive and multidisciplinary approach to maritime security by providing for the establishment of joint surveillance arrangements in respect of, for example, fisheries activities or pollution monitoring.[25]

210. Criminal activities at sea can take various forms and vary in magnitude, ranging from large-scale organized activities, like illicit traffic in narcotic drugs and psychotropic substances and the smuggling of migrants, to acts of vandalism of oceanographic equipment caused in particular by fishing vessels — a problem highlighted by IOC in its contribution to the present report (see para. 550). In addition, some criminal activities predominantly affect the maritime security of one State, though they can also have a transboundary effect, e.g., illegal fishing, while other crimes have a predominantly international dimension, often involving organized criminal groups, and affect all States. Crimes against the environment can fall into both categories. For example, in its decision IV/12 on "Illegal traffic in hazardous wastes and other wastes" adopted in 1998 the Conference of Parties to the Basel Convention in 1998, recognized that incidents of illegal traffic could vary in magnitude ranging from, for example, falsification of documents to large-scale organized activities. A recent regional workshop on "Criminal law and its administration in international environmental conventions", held in Samoa from 22 to 26 June 1998, highlighted the difficulties faced in the prosecution of environmental crimes. In many instances environmental problems have not been translated into legal issues and defined in laws.[26]

211. One of the objectives which the International Maritime Organization has set for itself for the coming decade is to promote the intensification of efforts by Governments and industry to prevent and suppress unlawful acts which threaten the security of ships, the safety of those on board and the environment (in particular, terrorism at sea, piracy and armed robbery against ships, illicit drug trafficking, illegal migration by sea and stowaway cases) (see draft IMO Assembly resolution in document C 82/26(c)/1).

212. The continuous expansion of organized crime and its ability to infiltrate the financial, economic and political systems of countries throughout the world has made the search for a proactive response a national, regional and global priority. At the global level, significant efforts are being expended on the promotion of international cooperation to prevent and combat transnational organized crime through the elaboration of a convention against transnational organized crime, as well as three additional protocols to address smuggling of migrants by land, air and sea; trafficking in women and children; and the illicit manufacturing of and trafficking in firearms.

213. Since its establishment by General Assembly resolution 53/111 of 9 December 1998, the Ad Hoc Committee on the Elaboration of a Convention against Transnational Organized Crime has already held four sessions (the fourth was held from 28 June to 9 July 1999) and is being urged to complete its work next year.

A. Illicit traffic in narcotic drugs and psychotropic substances

214. The smuggling of illicit drugs by sea is a global problem. As traffickers increasingly turn to sea transportation as a method of drug smuggling, many countries are recognizing the need to enhance their ability to combat such traffic. Training is required in all fields of maritime drug law enforcement, including surveillance of suspicious vessels, procedures for boarding, searching techniques and drug identification. In addition, more concerted international action is needed in meeting enforcement objectives.[27]

215. The legal framework governing international cooperation in the suppression of illicit traffic in narcotic drugs and psychotropic substances by sea is provided for in article 108 of UNCLOS and specifically in article 17 of the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. The objectives of article 17 are in turn supported by other provisions of UNCLOS, as well as other provisions of the 1988 Convention. The recently published Commentary on the 1988 Convention notes that while the focus of article 17 is on facilitating the acquisition of enforcement jurisdiction in relation to suspect vessels, the overall effectiveness of the scheme depends upon the possession by States of appropriate prescriptive jurisdiction, which is the function of article 4. Furthermore, law enforcement activity in this area is but one aspect of the wider issue of police and customs cooperation to combat and suppress the relevant offences. It should

therefore be examined in conjunction with, among others, article 9 (Other forms of cooperation and training).[28]

216. Apart from the recently published Commentary on the 1988 Convention, which constitutes a very useful tool for implementing the provisions of the Convention, the United Nations International Drug Control Programme (UNDCP) in its contribution provided information on recent measures it has taken to facilitate the implementation of article 17. UNDCP is undertaking a pilot project on maritime drug enforcement training and model legislation. The Commission on Narcotic Drugs had emphasized a need for common standard training curricula designed to promote a consistent international approach to maritime drug law enforcement. The UNDCP maritime drug law enforcement training guide prepared in the course of the pilot project has been finalized and is in the process of being printed, after extensive circulation and testing among Member States. It is anticipated that the guide would be available for distribution at the end of 1999. The guide deals with operational requirements, such as the planning and execution of searches at sea, and also provides an overview of the requirements of article 17 of the 1988 Convention and the provisions of UNCLOS that are applicable to maritime drug enforcement.[29] The guide also explains how countries can improve cooperation, for example, through the maintenance and exchange of information concerning shipping.

217. UNDCP also provided information on measures it has taken as a follow-up to the twentieth special session of the General Assembly devoted to combating the world drug problem, held at New York from 8 to 10 June 1998 (see A/53/456, paras. 126-128). The Assembly had considered illicit trafficking by sea in the context of measures to promote judicial cooperation and made a number of practical recommendations on steps that States should take to ensure that the relevant requirements of the 1988 Convention were met, for example by reviewing national legislation. In response to that recommendation, UNDCP has planned additional expert group meetings to prepare legislative guidelines promoting greater international cooperation against illicit traffic by sea. Furthermore, plans under way to monitor implementation of the recommendations of the twentieth special session will also include measures to promote judicial cooperation against illicit trafficking by sea.

218. A small technical meeting of experts on legal and practical issues relating to maritime drug law enforcement was convened in September 1999 to identify areas where model laws, agreements, forms and training materials might help States to fully implement the provisions of article 17. The outcome of the meeting will be reflected in a draft guide for competent national authorities, which is to be reviewed by a working group next year.

B. Smuggling of migrants

219. Smuggling of migrants has increased throughout the world in recent years and the trend is likely to continue into the next decade, since the economic disparity between the less developed States and the industrialized States will continue to provide an incentive to migrate.

220. The problem has been exacerbated in both size and seriousness by the growing involvement of organized crime groups. Smuggling of migrants is estimated to generate between $5 billion and $7 billion a year and many crime groups have transferred their knowledge, facilities and networks for smuggling drugs and other goods to this highly profitable market. The victims of this smuggling activity are often seen as parties to a criminal transaction. In reality, they are often victimized economically, physically or otherwise. They are often deceived about their country of destination and are sometimes forced to engage in criminal activities in the country of destination in order to reimburse expenses occurred. Smuggling of migrants disrupts established immigration policies of the countries of destination and often involves human rights abuses.[30]

221. Last year's report drew attention to the current practice of criminals of using ships, many of them converted fishing vessels, which do not even meet the minimum standards of safety and are certainly neither licensed nor properly equipped to carry passengers on international voyages. Many of these vessels are without nationality (A/53/456, para. 135). States are advised to review their domestic legislation to ensure that they can take enforcement measures against such ships. During the consideration of the agenda item "Oceans and the law of the sea" at the fifty-third session of the General Assembly many delegations expressed their concern about the increasing number of cases of smuggling of migrants at sea.

222. The urgent need for a global instrument to provide the legal framework for international cooperation to suppress and combat this criminal activity at sea has been underscored by the IMO and by the United Nations Centre for International Crime Prevention, which has requested its Ad Hoc Committee on the Elaboration of a Convention against Transnational Organized Crime to supplement the proposed convention against transnational organized crime (see paras. 212-213) with a protocol against smuggling of migrants.

223. The IMO Maritime Safety Committee at its 70th session, in December 1998, approved a circular (MSC/Circ.896) advising Governments what "Interim Measures for Combating Unsafe Practices Associated with the Trafficking or Transport of Migrants by Sea" they could take, pending the entry into force of the convention and protocol referred to above. The interim measures are intended to supplement the work of the Ad Hoc Committee and were brought to that Committee's attention as IMO's contribution to its work (see also A/53/456, paras. 140-142).

224. The purpose of the IMO circular is "to promote awareness and cooperation among Governments so that they may address more effectively unsafe practices associated with the trafficking or transport of migrants by sea which have an international dimension". Unsafe practices are defined for the purposes of the circular as "any practice which involves operating a ship that is: (1) obviously in conditions which violate fundamental principles of safety at sea, in particular those of the SOLAS Convention; or (2) not properly manned, equipped or licensed for carrying passengers on international voyages, and thereby constituting a serious danger for the lives or the health of the persons on board, including the conditions for embarkation and disembarkation".

225. The circular makes a number of recommendations for action by States to eliminate unsafe practices associated with the trafficking or transport of migrants by sea, including ensuring compliance with SOLAS; collecting and disseminating information on ships believed to be engaged in such unsafe practices; taking appropriate action against masters, officers and crew members engaged in unsafe practices; and preventing any such ships, if in port, from sailing. Other interim measures recommended in the circular are based on the provisions of article 17 of the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances: they include, for example, cooperation at the global level, the conclusion of bilateral and regional agreements to facilitate cooperation, and provision for the interdiction of suspect vessels at sea.

226. The circular provides that "measures taken, adopted or implemented pursuant to the circular to combat unsafe practices associated with the trafficking or transport of migrants by sea should be in conformity with the international law of the sea and all generally accepted relevant international instruments, such as the 1951 United Nations Convention and the 1967 Protocol relating to the Status of Refugees". Such measures should also be in conformity with international law pertaining to flag State jurisdiction and the rights and obligations of the coastal State.

227. States are reminded that, regardless of whether they decide to apply the interim measures or not, they have a duty to render assistance to persons in distress at sea. This obligation, to which reference is also made in the circular, is enshrined in both tradition and in article 98 of UNCLOS and SOLAS regulation V/10. Furthermore, States must ensure that the measures they take do not undermine international human rights law.

228. The IMO circular was subsequently conveyed to the first session of the United Nations Ad Hoc Committee, in January 1999, which during its consideration of a draft protocol against illegal trafficking and transport of migrants, including by sea, based on a proposal submitted by Austria and Italy containing draft elements for an international legal instrument against illegal trafficking and transport of migrants (A/AC.254/4/Add.1), agreed in principle that the relevant provisions of the IMO circular should be incorporated as far as possible in the appropriate section of the protocol.

229. The United Nations High Commissioner for Human Rights in an informal note presented to the Ad Hoc Committee at its fourth session (June-July 1999), drew the attention of the Committee to the need to further strengthen certain aspects of the draft protocol consistent with human rights instruments.

230. The revised draft protocol against the smuggling of migrants by land, air and sea (A/AC.254/4/Add.1/Rev.1), which was before the fourth session of the Ad Hoc Committee, incorporated the comments made at the first session. The provisions of draft article 7 (Measures against the smuggling of migrants by sea) under section II of the draft Protocol (Smuggling of migrants by sea), were derived from the provisions of the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances and IMO circular MSC/Circ.896. Draft article 7 could not be discussed owing to time constraints. Further sessions of the Committee are planned in late 1999 and in 2000.

C. Piracy and armed robbery

231. IMO provided information on the total number of incidents of piracy and armed robbery reported to the organization since it began compiling statistics on these unlawful acts in 1984; they had amounted to 1,455 by the end of April 1999. Although the number of such incidents had dropped in 1998 by 17 per cent compared with 1997, 51 crew members had reportedly been killed and another 31 had been wounded in 1998. The same areas continued to be most

affected by pirates and armed robbers: the Far East, in particular the South China Sea and the Malacca Strait; Latin America and the Caribbean; the Indian Ocean; and West and East Africa. The IMO Maritime Safety Committee at its seventy-first session in May 1999, although welcoming as an encouraging trend the aforementioned drop in reported piratical attacks, was particularly apprehensive to note that the degree of violence experienced had been escalating and therefore once again invited all Governments as well as the industry to intensify their efforts to eradicate those unlawful acts (MSC 71/23, sect. 15).

232. There were 115 incidents of piracy and armed robbery reported to the International Maritime Bureau of the International Chamber of Shipping in the first half of 1999. The reports indicate a slight decline in the number of incidents in some areas, while others showed a marked increase, most notably Indonesia — 36 incidents in the first half of 1999, 15 more than during the same period last year; Singapore Straits — 13 incidents, compared with no incidents over the last two years; and Nigeria — seven incidents, which were reported to have been particularly violent — compared with one incident for the same period last year.[31] Most of the attacks took place in territorial waters, including in straits used for international navigation, and in port areas.

233. Reports to the Maritime Safety Committee show that there has been an increase in the number of incidents where the sole objective of the attack was to steal the ship, in order to use it, for example, to commit cargo fraud.[32] The drug-related aspects of some of the attacks on ships in ports have also been highlighted.[33]

234. The international community has expressed its deep concern about the grave danger to life as well as the navigational and environmental risks to which acts of piracy and armed robbery can give rise. The General Assembly in its resolution 53/32 on "Oceans and the law of the sea" urged all States, in particular coastal States in affected regions, to take all necessary and appropriate measures to prevent and combat incidents of piracy and armed robbery at sea and to investigate or cooperate in the investigation of such incidents wherever they occurred and bring the alleged perpetrators to justice, in accordance with international law. The Assembly called upon States to cooperate fully with IMO in combating piracy and armed robbery against ships, including by submitting reports on incidents to that organization.

235. In October 1998, IMO undertook two missions of experts to the countries most affected: one to the Philippines, Malaysia and Indonesia, and another to Brazil. The missions were then followed up by two regional seminars and workshops: one for the South-East Asian region (Singapore, 3-5 February 1999), and the other for the Latin America and the Caribbean region (Brasilia, October 1998). Other seminars and workshops are scheduled for the West African region (Nigeria, 6-8 October 1999) and for the region of the Indian Ocean.

236. Some of the main problem areas identified during the missions of experts and regional seminars and workshops held so far were: the economic situation currently prevailing in the regions concerned; certain resource constraints on law-enforcement agencies; lack of communication and cooperation between the various agencies involved; the response time after an incident has been reported to the coastal State concerned by affected ships; general problems of ship reporting; timely and proper investigation into reported incidents; the prosecution of pirates and armed robbers when apprehended; and lack of regional cooperation.

237. The Singapore and Brasilia seminars proposed the development of an international code for the investigation of piracy and armed robbery against ships which would recommend an appropriate punishment for acts of piracy and armed robbery; and also prepared amendments to two IMO circulars: MSC/Circ.622 on "Recommendations to Governments for preventing and suppressing piracy and armed robbery at sea", and MSC/Circ.623 on "Guidance to shipowners and ship operators, shipmasters and crews on preventing and suppressing acts of piracy and armed robbery against ships". The Maritime Safety Committee at its 71st session expressed its support for the development of a code (MSC 71/23, para. 15.20-15.21) and adopted with modifications the proposed amendments to the two circulars.

238. The revised circular MSC/Circ.622/Rev.1 includes a number of new recommendations to Governments, for example: (a) to establish their jurisdiction over the offences of piracy and armed robbery at sea, including adjustment of their legislation, if necessary to enable the apprehension and prosecution of the offenders; (b) to adopt an incident command system and incorporate therein existing mechanisms for dealing with other maritime security matters, e.g., smuggling, drug-trafficking and terrorism, in order to allow for efficient use of limited resources; (c) to establish cooperation agreements with neighbouring States having common borders in areas threatened by piracy and armed robbery to provide, *inter alia*, for the coordination of patrol activities; and later conclude a regional agreement with those States to facilitate coordinated response at the tactical as well as the operational level, e.g., through the establishment of a regional incident command system; and through the incorporation of specific provisions in existing

agreements, bilateral or regional, permitting the extension of hot pursuit into the territorial sea of other neighbouring States. An example of a regional agreement is appended to the revised circular.

239. National reports presented at the Singapore seminar indicated that some coastal States are not in a position to arrest and prosecute in cases of piracy on the high seas because they have no provisions in their domestic legislation to do so (MSC 71/15/4). At the 71st session of the Maritime Safety Committee, Venezuela in its submission (MSC 71/15/6) pointed out that criminals were profiting from the legal confusion which arises between acts of piracy — a clearly defined term in international law — and armed robbery a term for which no legal definition exists, and which has been introduced to cover illicit acts occurring within the jurisdiction of a coastal State. It therefore proposed that the format of the annex to the reports on acts of piracy and armed robbery against ships provided to IMO should be modified to clearly distinguish "acts of piracy" from "armed robbery". The Committee agreed that the UNCLOS definition of piracy should be included as a footnote in future IMO circulars (MSC 71/23, para. 15.19). The draft regional agreement appended to IMO circular MSC/Circ.622/Rev.1 (see para. 238) defines "piracy to mean those acts as defined in article 101 of UNCLOS". In this connection, it may be noted that a Joint International Working Group, established by the Comité Maritime International, is addressing the problem of the lack of uniformity in national laws on piracy and maritime violence.

D. Stowaways

240. Concern was recently expressed in IMO about the apparent increase in the number of incidents involving stowaways. Many cases had been reported where stowaways had spent a considerable time on board until disembarkation had been possible; and in some other cases stowaways had outnumbered the crew. In view of the potential for dangers faced by crews; the considerable risks faced by the stowaways; the difficulties which shipmasters and shipowners encountered in disembarking stowaways from ships into the care of the appropriate authorities; and the potential for disruption of maritime traffic, this situation was considered unacceptable.[34]

241. In the light of the concerns expressed and as a follow-up to the 1997 "Guidelines for the allocation of responsibilities to seek the successful resolution of stowaway cases" (IMO Assembly resolution A.871 (20); see A/53/456, paras. 154-157), the Facilitation Committee at its twenty-sixth session, in September 1998, approved a circular (FAL.2/Circ.50) requesting member States and the industry to provide information on stowaway incidents, including details of the ship involved; date and place of embarkation; and number and nationality of stowaways. Information was also requested on the experience of Governments and industry in the implementation of the guidelines.

242. Information provided in response to the Facilitation Committee circular included a report by the Baltic and International Maritime Council (BIMCO) providing information on 62 incidents of stowaway boardings reported to the Council from 1992 to May 1999 (48 incidents alone took place in the period 1998 to May 1999). The report indicated that 193 stowaways had been involved in the 62 incidents; the highest number in one incident was 31. Of the 44 incidents for which stowaways remained on ships for periods exceeding one day, the average stay on board was 29 days. The longest period reported for stowaways remaining on board a vessel was 319 days (FAL 27/INF.9). Hong Kong, China, reported on 13 cases, which it had encountered in the past seven months (FAL 27/INF.4). Denmark estimated that in the last five years there had been approximately 150 incidents involving Danish merchant ships (FAL 26/10/3, para. 8). Norway provided information on its experience in implementing the guidelines (FAL 27/10/1).

243. The Facilitation Committee was to consider these reports at its 27th session in September 1999. It had agreed at the previous session that in the light of relevant information received, it would consider taking action, including the development of a relevant binding instrument, as might be necessary (FAL 26/19, paras. 10.8-10.9). The International Chamber of Shipping had proposed incorporating the 1997 Guidelines in the Convention on the Facilitation of International Maritime Traffic (see FAL 26/10/2, FAL 26/INF.8, and FAL 27/10, containing proposed amendments to the Facilitation Convention).

VII. Development and management of marine resources and protection and preservation of the marine environment

244. UNCLOS was drawn up with three fundamental objectives at its core: ensuring peace and security in the world's oceans; promoting equitable and efficient utilization of their resources; and fostering protection and preservation of the marine environment. Economically and ecologically

sustainable use of the oceans and their resources is thus integral to the effective implementation of UNCLOS. This section of the report deals with developments during the past year in this respect.

245. The value of the oceans to mankind has various dimensions — political, social, economic, ecological and cultural. While there are intractable problems in quantifying the value of the oceans in all these dimensions, a rough indication of the importance of oceans in economic terms can be obtained by the monetized value of the goods and services provided by the oceans and their resources. Even here, the exercise is fraught with enormous difficulties, not the least of which are attributable to methodological problems and lack of data. Nevertheless, several attempts have been made to quantify the monetized value of the contributions of the marine industries to the total world gross domestic product (GDP). Marine industries include marine fisheries, marine mining, non-conventional energy industries, freshwater production, coastal services, environmental services, seaborne trade, ocean-related tourism, submarine telecommunications and fibre-optics cable, safety and salvage, naval defence and ocean-related education, training and research.

246. To illustrate, a 1998 report of the Independent World Commission on the Oceans states: "One recent study suggests that the sum total of marine industries ... for which data are available, amounts to approximately US$ 1 trillion out of a total global GDP of US$ 23 trillion."[35] With all the caveats and variations, what these estimates demonstrate is that the economic importance of the oceans is immense.

247. While the above focuses on the goods and services produced from the oceans and their resources, recent interest in assessing the economic importance of the ecological services provided by the various ecosystems of the earth have led to interesting endeavours to estimate the monetary value of such services. Such services include, *inter alia*, gas regulation (e.g., balance between carbon dioxide and oxygen, maintenance of ozone for ultraviolet radiation protection), climate regulation, disturbance regulation (e.g., storm protection, flood control), water supply cycling of nutrients, waste treatment, food production and raw materials supply. According to one such study, the value of the ecological services of the marine and coastal ecosystems amounts to $21 trillion, as compared with $12 trillion for land-based ecosystems.[36] Such estimates are of course subject to wide variability; for example, another study places the value of the ecological services of the marine and coastal ecosystems at no more than $3 trillion.[37] Nevertheless, despite the limitations and variations, what these estimates demonstrate is that the ecological importance of the oceans is immense.

248. During the past year, grave concerns were voiced once again not only in relation to the sustainability of the economic and ecological values of the oceans, but also in relation to the allocation of such values among the nations of the world. This was particularly evident in the deliberations in the South African Conference on Cooperation for the Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa (Cape Town, 30 November-4 December 1998), organized by the Advisory Committee on the Protection of the Sea, UNEP and the Government of South Africa as a follow-up to the Pan African Conference on Sustainable Integrated Coastal Management (Maputo, 18-25 July 1998), where issues of depletion of living marine resources by foreign fleets were emphasized.

A. Conservation and management of living marine resources

1. Marine fisheries

(a) World review of marine fisheries

249. In addition to the issues of overfishing and by-catch, which were the subjects of previous reports of the Secretary-General (see A/52/487, para. 191; A/53/456, paras. 261-264), the prevalence of illegal, unregulated and unreported (IUU) fishing on the high seas, in contravention of conservation and management measures adopted by subregional and regional fisheries management organizations and arrangements, is considered to be one of the most severe problems currently affecting world fisheries. IUU fishing is often undertaken by fishing vessels of States or entities that are not members of fisheries organizations or arrangements and do not consider themselves bound by the restrictions imposed by those management organizations and arrangements. IUU fishing is also undertaken by vessels that were formerly registered in a State member of regional fisheries organizations or arrangements but were subsequently registered in a non-member State (reflagging to a flag of convenience) to avoid compliance with conservation and management measures. Such a situation has far-reaching consequences for the long-term, sustainable management of fisheries, as it is likely to lead to the non-achievement of management goals for the organizations and arrangements concerned, with implications for both short-term and long-term benefits, and may in extreme cases lead to a fishery collapse or seriously affect efforts to rebuild

stocks.[38] IUU fishing also raises some fundamental issues associated with well-established norms and principles of international law relating to the qualified freedom of high seas fishing, a flag State's exclusive jurisdiction over vessels flying its flag on the high seas, rules regarding treaties and third States, and the duty to cooperate for the conservation and management of living marine resources of the high seas.

250. The IUU fishing phenomenon has been reported in various regions under the purview of subregional and regional fisheries management organizations or arrangements.[39] It has been noted in this regard that well over 100,000 tons of illegal catch of Patagonian toothfish had been harvested in 1996 in the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) Convention area, compared to an allowable catch of approximately 13,000 tons (see A/53/456, para. 288) and that around 42,000 tons of toothfish were traded in 1997-1998, or some 45 per cent more than the legal catch level for that period.[40] The International Commission for the Conservation of Atlantic Tunas (ICCAT) has also recognized that in 1998 a large number of large-scale longline vessels were catching species managed by ICCAT in the Convention area without reporting their catches to the Commission or respecting the ICCAT conservation and management measures.[41] Similarly, the General Fisheries Commission for the Mediterranean (GFCM) has also indicated that activities of vessels fishing under the flag of convenience in the Mediterranean region compelled it to develop a control scheme to address this issue.[42] In addition, States parties to the North Pacific Anadromous Fish Commission (NPAFC) have also reported that IUU high seas fishing for salmon by States non-parties with the use of driftnets was taking place in the NPFAC Convention area.[43] Furthermore, both the Indian Ocean Tuna Commission (IOTC) and the Commission for Conservation of Southern Bluefin Tuna (CCSBT) have expressed concern over activities of flag-of-convenience vessels and vessels flying the flag of non-member States in areas under their respective competence.[44] On the basis of data from Lloyds Register of Shipping, FAO has estimated that 5 per cent of fishing vessels in the gross registered tonnage range of 100 GRT-150 GRT were in open registers, increasing to 14 per cent for fishing vessels over 4,000 GRT.[45] Moreover, a compilation of flag-of-convenience longline vessels targeting tuna provided by the Fisheries Agency of Japan in 1998 put the number of these vessels at 238.[46]

251. Similarly, IUU fishing activities have been reported in zones under the national jurisdiction of coastal States, particularly developing coastal States, in violation of their sovereign rights to conserve and manage the living marine resources in those areas in accordance with articles 56, 61 and 62 of UNCLOS. These activities are believed to have adverse effects on the sustainable development and conservation of the fishery resources, economies and food security of those countries. The seriousness of the situation compelled the United Nations General Assembly in 1994 to adopt resolution 49/116 of 19 December, in which it called upon States to take measures to ensure that no fishing vessels entitled to fly their national flag fished in zones under the national jurisdiction of other States, unless duly authorized by the competent authorities of the coastal State or coastal States concerned, and that such fishing operations be conducted in accordance with the conditions set out in the authorization.

252. In addition, IUU fishing may have exacerbated the problem of discards and by-catch, including incidental catch of seabirds during fishing operations, in view of the fact that vessels involved in this type of activity would likely use unsustainable fishing practices and non-selective fishing gear, thus causing more serious adverse impacts on non-target species and on marine biodiversity than legally operated fishing vessels. It has been reported that in 1998, IUU fishing vessels were responsible for killing between 50,000 and 89,000 seabirds in the CCAMLR Convention area, compared with 1,562 killings attributed to legally conducted fishing activities.[47] It has been also reported that deliberate loss of gear by unregulated fishery in order to evade sighting or inspection has contributed to an increased mortality of fish stocks, seabirds and marine mammal populations.[48]

253. In fact, IUU fishing — consisting of fishing operations conducted outside agreed conservation and management as well as data collection schemes — in failing to provide vital data to fisheries management organizations, may undermine the data quality achieved by members of regional fisheries organizations and arrangements which enables an estimation of key fisheries parameters such as discards and non-target species mortality.[49] Moreover, in such unregulated fishery, where immediate economic returns are far more important than concerns for long-term food security and sustainable use, fishers would frequently discard unwanted components of their catch if they considered that their expected net price, i.e., the real price less the landing costs, would be negative, and if the resultant costs incurred in landing would be greater than those incurred by discarding.[50]

254. It is believed that the open access regime of high seas fisheries,[51] the lack of flag State control over the activities of fishing vessels flying their flag on the high seas and the existence of an overcapacity in the fishing industry have played a significant role in the worsening of the IUU fishing

phenomenon. Compounding such problems is the ability of a fishing vessel to reflag to a flag State of convenience with which it has often no real link, in order to escape internationally agreed conservation and management measures on the high seas which its own flag State would have otherwise enforced. However, it is recognized that, pursuant to article 91 of UNCLOS, every State is entitled to fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory and for the right to fly its flag. Additionally, article 94 of UNCLOS specifies the administrative, technical and social matters in respect of which a flag State is required to exercise effective jurisdiction over vessels flying its flag.

255. While UNCLOS provides that a genuine link must exist between a State and a ship, flying its flag, the International Tribunal for the Law of the Sea has however pointed out that "there is nothing in article 94 to permit a State which discovers evidence indicating the absence of proper jurisdiction and control by a flag State over a ship to refuse to recognize the right of such a ship to fly the flag of that State" (*M/V "Saiga" (No. 2) Case, Saint Vincent and the Grenadines v. Guinea, 1999*, para. 82). The Tribunal stressed that "the purpose of the provisions of the Convention on the need for a genuine link between a ship and its flag State is to secure more effective implementation of the duties of the flag State, and not to establish criteria by reference to which the validity of the registration of ships in a flag State may be challenged by other States" (ibid., para. 83). In this connection, UNCLOS specifies that where a State has clear grounds to believe that proper jurisdiction and control with respect to a ship have not been exercised, its only recourse is to report the facts to the flag State, which is then obliged to "investigate the matter and, if appropriate, take any action necessary to remedy the situation".[52]

256. In view of the seriousness of the IUU fishing problem, with its potential adverse effects on recently launched measures to control overcapacity and overfishing (see para. 258), several initiatives have been taken at the international level to confront these fishing activities. First, the FAO Committee on Fisheries (COFI), at its twenty-third session, held in Rome from 15 to19 February 1999, made an urgent appeal to those States which had not yet ratified the Compliance Agreement (see para. 98) to consider doing so as soon as possible and, pending the entry into force of the Agreement, suggested that additional steps might need to be considered by FAO to address the issue of IUU fishing.[53] In this respect, it was suggested that cooperation between regional bodies against vessels carrying "flags of convenience" would be a positive step, including through the compilation of lists of vessels flying "flags of convenience" in areas under their competence.[54] Secondly, COFI noted that issues related to reflagging and ship registration would be one of the subjects to be discussed at the next meeting of the IMO Subcommittee on Flag State Implementation and decided to stress to the Subcommittee the importance it attached to those issues.[55] Thirdly, the FAO Ministerial Meeting on Fisheries (Rome, 10-11 March 1999) decided to incorporate in its Declaration on the Implementation of the Code of Conduct for Responsible Fisheries a clear statement of resolve for the international community to develop a global plan of action to deal effectively with all forms of IUU fishing, including fishing vessels flying "flags of convenience".[56] Fourthly, the FAO Counc.[1], which met for its one-hundred-and-sixteenth session in Rome from 14 to 19 June 1999, also urged FAO to adopt a global approach to develop a strategy to address the problem of IUU fishing through the development of an international plan of action within the framework of the Code of Conduct.[57]

257. The Commission on Sustainable Development (CSD), at its seventh session in New York (19-30 April 1999) (see CSD decision 7/1, para. 18), expressed its support of the Rome Declaration adopted by the FAO Ministerial Meeting under which FAO would give priority to the task of developing a global plan of action to deal effectively with IUU fishing. The Commission pointed out that such a plan should also deal with the problem of those States which did not fulfil their responsibilities under international law as flag States with respect to their fishing vessels, and in particular those which did not exercise effectively their jurisdiction and control over their vessels which might operate in a manner that contravened or undermined the relevant rules of international law and international conservation and management measures. CSD was convinced that any solution to the problem of IUU fishing would require coordinated efforts by States, FAO, regional fisheries management bodies and other relevant international agencies.[58] It therefore encouraged IMO, in cooperation with FAO and the United Nations Secretariat, to consider the implications in relation to fishing vessels of the need to develop, as a matter of urgency, binding measures, to ensure that ships of all flag States meet international rules and standards so as to give full and complete effect to UNCLOS, especially article 91 (Nationality of ships), as well as provisions of other relevant conventions.[59] CSD has also advocated the development of an effective regime for port State control (see also para. 183).

258. In other developments, COFI adopted at its last session three International Plans of Action in support of the implementation of the FAO Code of Conduct for

Responsible Fisheries and as a follow-up to requests and recommendations made at the twenty-second session of COFI in March 1997.[60] The first plan to be adopted was the International Plan of Action for the Management of Fishing Capacity. It is aimed at encouraging States and regional fisheries organizations confronted with an overcapacity problem that undermines the achievement of long-term fisheries sustainability to limit capacity initially at the current level and to progressively reduce the fishing capacity of affected fisheries. The objective is for States and regional fisheries organizations to achieve worldwide an efficient, equitable and transparent management of fishing capacity, preferably by 2003 but not later than 2005.

259. The second plan, known as the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries, is aimed at reducing such incidental catch wherever it occurs. Under the plan, States with longline fisheries would conduct an assessment of those fisheries to determine whether a seabird incidental catch problem existed. If it did, they should adopt a National Plan of Action for reducing the incidental catch of seabirds in longline fisheries (NPOA-SEABIRDS). States should start implementation of their National Plans of Action no later than in 2001 and should regularly, at least every four years, assess their implementation to identify successful cost-effective strategies. In addition, States which determine that NPOA-SEABIRDS is not necessary should review that decision on a regular basis, particularly taking into account changes in the pattern of their fisheries.

260. The third plan adopted by COFI is the International Plan of Action for the Conservation and Management of Sharks, which seeks to address concerns over the increase of shark catches and the potential adverse impacts this has for the populations of some shark species in several areas of the world's oceans. The plan encompasses both target and non-target catches of sharks and applies to areas under the jurisdiction of States and to the high seas. It requests States to adopt a national plan of action for conservation and management of shark stocks by 2001 if their vessels conduct directed fisheries for sharks or if their vessels regularly catch sharks in non-directed fisheries.

261. In further developments, COFI held discussions on several issues affecting the conservation and management of living marine resources of the world's oceans and seas within the framework of the implementation of the Code of Conduct for Responsible Fisheries. These ranged from consideration of the progress reports of individual States in the implementation of the Code, including incorporation of the relevant provisions of the Code into their national legislation and adequate dissemination, to the need to provide financial and technical assistance to developing countries in the areas of training, capacity-building and institutional strengthening for the implementation of the Code.

262. Discussions also focused on the fisheries problems of small island developing States, eco-labelling, effects of subsidies on the sustainable use of fisheries, listing criteria for marine species under the Convention in the International Trade of Endangered Species (CITES) and strengthening of the role of regional fisheries bodies and arrangements.

263. COFI reviewed the progress made in the implementation of the 1995 Programme of Fisheries Assistance for small island developing States. The objectives of the Programme in those countries were: (a) to strengthen the capacity of fisheries administrations; (b) to conserve, manage, develop and utilize fisheries resources in a rational manner; (c) to enhance food security; and (d) to utilize fisheries resources in such a way that they would contribute to national economic and social development on a sustainable basis. While acknowledging the help of bilateral donors, concern was expressed that FAO had not been able to secure sufficient funding for the Programme. COFI recognized that further assistance would be needed by small island developing States to develop, manage and conserve fishery resources in order for them to increase food security and their standard of living. Areas requiring assistance included, *inter alia*, diversification of socio-economic opportunities, conservation and sustainable use of biological diversity, enterprise development, capacity- building and aquaculture.[61]

264. With respect to eco-labelling, although some doubt was voiced as to the role of FAO as an appropriate international organization to consider technical criteria for eco-labelling schemes, there was a consensus that any future agreement on eco-labelling guidelines should be consistent with the relevant provisions of the Code of Conduct for Responsible Fisheries, particularly those related to post-harvest utilization, trade and regulations concerning fisheries products. There was also a general agreement that any scheme should be transparent, voluntary and non-discriminatory, should not be an obstacle to trade and should ensure equivalence of standards between countries and/or schemes, recognize the sovereign rights of States and comply with all relevant international agreements.

265. As to the issue of subsidies, no consensus was reached on the nature of any future work FAO should undertake on the topic, in view of the fact that other organizations had competence e.g., the World Trade Organization, or had already undertaken work on the subject, such as the

Committee for Fisheries of the Organisation for Economic Cooperation and Development. In this connection, OECD reported that a study it would complete by the end of 1999 was exploring the economic and policy implications of a transition to sustainable and responsible fisheries, including structural adjustment, governmental financial transfers, post-harvest practices, policies and temporal social and economic trade-offs. Activities by the OECD Committee for Fisheries for 2000 would cover monitoring and analysis of fisheries policies, fisheries management costs, markets liberalization and fisheries sustainability indicators.

266. With respect to CITES listing criteria for harvested marine species, COFI expressed the view that a revision of the current CITES criteria to allow their application to some fish species exploited on a large scale and subject to international trade would require substantial scientific or technical input as well as a political process, in view of the possible implications of such revision for trade.

267. Regarding the role of regional fishery organizations, the Committee urged FAO to continue the systematic analysis of FAO regional fishery commissions and committees, especially the institutional and financial arrangements of those bodies, the strategies used to implement decisions and recommendations, as well as measures taken to address current international fishery issues. In this context, COFI emphasized the important role regional fishery bodies can play in respect of the issues of fishing capacity and illegal fishing activities on the high seas.

(b) Regional review of the status of fisheries and of conservation and management measures

Atlantic Ocean

268. The International Commission for the Conservation of Atlantic Tunas at its eleventh special meeting (Santiago de Compostela, Spain, 16-23 November 1998), adopted several recommendations and resolutions concerning the conservation and management of Atlantic tunas.[62] These included restrictions on the use of fish aggregation devices, change of closed season for purse-seine fishery for bluefin tuna in the Mediterranean, registration and exchange of information on fishing vessels targeting bigeye tuna, conservation measures for vessels larger than 24 metres in overall length fishing for bigeye tuna, limitation of fishing capacity relating to northern albacore, rebuilding programme for Western Atlantic bluefin tuna, establishment of a working group on allocation criteria, implementation and sharing of the southern albacore catch limit, and a ban on landings and trans-shipments of vessels of non-contracting parties identified as having committed serious infringements in the Convention area. ICCAT also adopted a resolution on measures it would implement regarding unreported and unregulated catches of tuna by large-scale longline vessels in its area of competence.

269. With respect to the control of IUU fishing, ICCAT reiterated its recommendation on trans-shipment and vessel sightings adopted in 1997 stating that any vessel flying the flag of a non-contracting party or entity sighted in the Convention area was presumed to be undermining ICCAT conservation measures. When such vessels voluntarily entered a port of any Contracting Party, they should not be allowed to land or trans-ship any fish until an inspection had taken place. Landings and trans-shipments of the catch would be prohibited in all Contracting Party ports if the inspection had revealed that the vessels had species on board subject to ICCAT conservation and management measures, unless those vessels had established that the fish were caught outside the Convention area, or in compliance with the relevant ICCAT conservation and management measures and requirements. The results of the inspection are to be transmitted immediately to ICCAT, to all Contracting Parties and to the flag States of the vessels concerned. In addition, in response to the serious threat posed by large-scale longline vessels to its resource conservation measures, ICCAT requested all countries which imported frozen tunas and tuna-like products or countries in whose ports such products were landed to collect as much import and landing data information as possible and to submit it annually to it. The information would allow ICCAT to identify Contracting Parties and non-Contracting Parties or entities whose vessels had been fishing tuna and tuna-like species in contravention of ICCAT conservation and management measures and to recommend to its Contracting Parties effective measures including non-discriminatory trade restriction measures, consistent with their international obligations, to prevent the longline vessels concerned from continuing fishing operations for tunas and tuna-like species in a manner which would diminish the effectiveness of ICCAT conservation measures.

270. ICCAT also adopted recommendations establishing total allowable catch (TAC) for bluefin tuna in the Eastern Atlantic and the Mediterranean. Furthermore, ICCAT decided to set up a Working Group on Allocation Criteria to consider recommending criteria for quota allocation, including quotas of Contracting Parties, new Contracting Parties, non-Contracting Parties or entities. In this respect, concern over ICCAT quota allocation criteria was raised by States at the last meeting of the Ministerial Conference on Fisheries Cooperation among African States bordering the

Atlantic Ocean, held at Morocco in February 1999 (see para. 277)

North Atlantic Ocean

271. In the north-west Atlantic, the Northwest Atlantic Fisheries Organization (NAFO) adopted at its twentieth annual meeting (Lisbon, 6-18 September 1998) joint international measures and actions for the conservation and utilization of the fishery resources in the Regulatory Area, following an assessment by its Scientific Council of the state of 25 fish stocks in the Regulatory and Convention Areas.[63] In line with scientific advice, NAFO agreed to put under moratoria in several statistical divisions in 1999 stocks of cod, redfish, American plaice, witch flounder and capelin. With regard to Greenland halibut, TAC for the fisheries was increased from 27,000 to 33,000 metric tons, of which 24,444 metric tons were allocated to the Regulatory Area.

272. NAFO also adopted new conservation and management measures on: conduct of shrimp fishery on the Flemish Cap; observers coverage and installation of tracking devices on all vessels fishing in the Regulatory Area; electronic transmission formats of NAFO hail reports from Contracting Parties; and prohibition of trans-shipment of fish from non-Contracting Party vessels sighted in fishing activities in the NAFO Regulatory Area. Moreover, NAFO has decided that more accurate data and control should be introduced to account for all discards and by-catches, and consistent formats and procedures for scientific data collection should be adopted by observers on-board fishing vessels, in order to provide additional tools for stock assessments. NAFO agreed also to call a special inter-sessional Working Group meeting in spring 1999 on the use of the precautionary approach to fisheries management. Such a meeting would consider the idea of "case-specific studies" and develop precautionary management strategies for three groundfish stocks (cod, yellow flounder and shrimp).

273. In addition, NAFO agreed to continue work on recommendations to improve the transparency of NAFO proceedings and decisions relating to dispute settlement procedures and on closer interregional cooperation with other regional fisheries organizations with a view to sharing information and promoting compliance with relevant conservation measures by non-Contracting Party vessels. In respect of measures that may have a bearing on IUU fishing, NAFO decided, on the one hand, to undertake once again diplomatic démarches to the non-Contracting Party flag States whose vessels had conducted fishing operations in its Regulatory Area in 1998, namely Belize, Honduras, Panama and Sierra Leone (see also A/51/645, para. 164), and on the other hand, to prohibit charter vessel arrangements until a comprehensive set of rules had been developed by NAFO to improve control of the fisheries by Contracting Parties.

274. In the north-east Atlantic, the North East Atlantic Fisheries Commission (NEAFC) at its seventeenth annual meeting (London, 17-20 November 1998) adopted the recommendations of the International Council for the Exploration of the Sea (ICES) Advisory Committee on Fisheries Management (ACFM) concerning the conservation and management of living marine resources falling under its competence, including the establishment of the 1999 TACs for Norwegian spring, blue whiting, oceanic type redfish. In implementation of a multi-annual management for mackerel, TACs of mackerel for 1999, 2000 and 2001 were adopted by NEAFC at an extraordinary meeting in February 1999.[64]

275. NEAFC also adopted a recommendation for a scheme to promote compliance by non-Contracting Party vessels with the conservation and management measures established by it. The scheme would enter into force on 1 July 1999 at the same time as a Scheme of Control and Enforcement of conservation and management measures in respect of fishing vessels fishing in areas beyond the limits of national jurisdiction in the Convention area. The latter, which would enhance the role of NEAFC in monitoring, control, surveillance and enforcement, was a clear application of the relevant provisions of the 1995 Agreement on Fish Stocks which provide for the strengthening of the role of regional fisheries organizations in all aspects of fisheries management.[65] The scheme is believed to be the first control and enforcement scheme in the world based upon satellite tracking and the use of automatic data transmission methods.[66]

Central Atlantic Ocean

276. The third ministerial meeting of the Follow-up Committee of the Ministerial Conference on Fisheries Cooperation among African States bordering the Atlantic Ocean was held at Rabat from 22 to 25 February 1999 to assess the state of cooperation between the Conference and other international and regional organizations at the technical and financial levels. The Ministerial Conference was established by the Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean, adopted at Dakar on 5 July 1991. The Convention promotes cooperation among its members in the conservation and rational management of shared stocks and the marketing of fishery products, as well as the exchange of information on and conservation of highly migratory species, including

coordination of members' actions in that area within the competent international organization.[67]

277. With respect to the management of highly migratory species, the meeting expressed concern over the existing methods of ICCAT of allocating fishing quotas on the basis of historical catch statistics (see also para. 270). Since such systems were still in the process of improvement, especially in developing countries where catches of a flag State authorized to fish in the exclusive economic zone of a coastal State were considered to be quotas of that flag State instead of being allocated to the coastal State that had authorized fishing in its zone, and since these allocation systems took into account neither the particular socio-economic parameters of developing countries nor the importance of their artisanal fisheries, the Follow-up Committee called for a review of the methods under which quotas were allocated so that they could take into account the socio-economic characteristics of developing coastal States.[68]

South Atlantic Ocean

278. Namibia, in concert with Angola, South Africa and the United Kingdom (on behalf of St. Helena, Tristan da Cunha and Ascension Island), initiated in 1996 a process for the establishment of a regional fisheries organization in the south-east Atlantic referred to as the Southeast Atlantic Fishery Organization (SEAFO). The process was prompted by Namibia's particular concern to ensure that its fisheries interests were not undermined by unregulated and uncontrolled fishing for straddling fish stocks in the high seas area adjacent to its exclusive economic zone. The objective of the future organization would be the long-term conservation and sustainable use of fishery resources in the Convention area, excluding highly migratory fish stocks and sedentary species subject to the sovereign rights of coastal States on the continental shelf.

279. Several important issues are reported to be still under discussion. These include a possible reference to the 1995 Fish Stocks Agreement (which is not yet in force), use of the precautionary approach to fisheries management, criteria allocating fishing opportunities, reference to the special requirements of developing countries, port State rights and duties, compliance and enforcement arrangements, decision-making procedures, official languages, final clauses, financing formula, headquarters agreement and possible interim measures for the implementation of the future convention. Moreover, the current draft does not yet contain provisions for dispute settlement mechanisms. The fourth meeting of the parties to negotiate the draft convention was held in March 1999 and another is scheduled for September 1999. The parties have set December 1999 as a target date for the completion of their negotiations.[69]

Mediterranean Sea

280. During its last three sessions, the General Fisheries Commission for the Mediterranean (GFCM) has taken steps to strengthen its role in fisheries conservation and management.[70] Accordingly, as a follow-up to the decisions taken at the twenty-second session, GFCM reviewed the status of implementation of resolutions 97/1 and 97/3 relating to fisheries management, particularly the ban on the use of large-scale drift-net fishing in the Mediterranean and the prohibition of the bluefin tuna purse-seine fishery during closed season.[71] Moreover, GFCM stressed the need to improve the overall quality and reliability of its statistical and information systems in order to enable it to base its management decisions on the best scientific evidence available.

281. GFCM considered also the progress report of the five-year FAO/COPEMED project, funded by Spain, aimed at helping the participating States (Algeria, France, Italy, Libyan Arab Jamahiriya, Malta, Morocco, Spain and Tunisia) to establish a coordinated scheme for generating scientific criteria and recommendations that would permit application of the most adequate strategy for the optimum management of the fishery resources. To this end, COPEMED would help GFCM in operational and practical activities in order to facilitate the achievement of its goals, including a feasibility study of a database on social and economic indicators in the western Mediterranean.[72]

282. In addition, GFCM, as part of its medium and long-term programme, would undertake to: (a) adopt effort control for some fisheries and introduce the precautionary approach for the management of others; (b) develop a control scheme for fishing vessels using "flags of convenience"; (c) harmonize fishery regulations applied by GFCM; (d) increase coordination and cooperation in fisheries research between members; (e) standardize statistics collection; (f) require its secretariat to maintain relevant database information and report regularly on its contents; and (g) develop an integrated systems-based approach to fisheries management.

Indian Ocean

283. The third session of the Indian Ocean Tuna Commission (IOTC) was held at Mahé, Seychelles, from 9 to 12 December 1998. Upon the advice of its Scientific Committee, IOTC endorsed recommendations, *inter alia*, on

the conservation of tuna and tuna-like species, tagging, issues related to by-catch and discards, statistical requirements, as well as confidentiality policy on data submissions. It also took note of the implications of catches by Taiwan Province of China on the scientific assessment of tuna stocks and agreed to pursue an appropriate arrangement to deal with the issue.[73]

284. In order to obtain a better evaluation of the status of yellowfin stock, IOTC agreed to take a number of measures aimed at assessing the status of the resources in the Convention area, including the collection of data from diverse fisheries, consideration of uncertainties in stock structure, biology and catch and effort data, size information for all fisheries harvesting yellowfin in the Indian Ocean and development of a large-scale tagging programme covering the full range of yellowfin stock. Such assessment would take into account the recent increases in efficiency of fishing fleets in the calculation of indices of abundance. With respect to the management of bigeye tuna, in view of the poor knowledge and worrisome condition of the stock, IOTC agreed to establish a comprehensive list of all vessels of all gears catching bigeye tuna, taking into account in the exercise of the difficulties posed by small vessels in artisanal fisheries and flag-of-convenience vessels. It was also agreed that any controls of fishing for bigeye tuna would be implemented in cooperation with fisheries management organizations in other oceans to avoid fishing pressures in those areas. As to the skipjack tuna, although the status of the stock was uncertain, IOTC believed that recruitment overfishing of skipjack was unlikely to occur in the near future.

285. Concerning the status of albacore tuna, IOTC was of the view that, although the stock seemed to have recovered since the closure of drift gillnet fishery in 1992, further study was needed in the light of previous studies conducted in other oceans that suggested that the abundance of the species might be more dependent upon changes in large-scale environmental conditions than changes in fishing strategies.

286. In addition, IOTC stressed the need to control fishing capacity and welcomed Japan's decision to reduce its longline fleet by 20 per cent, as well as the voluntary moratorium applied by European Community (EC) purse-seine fleets on the use of fish aggregating devices (FADs) during part of the year in the western Indian Ocean and the Multi-annual Guidance Project aimed at a reduction of the EC fleet. IOTC also adopted a recommendation on registration and exchange of information on vessels fishing for tropical tunas in the IOTC area of competence[74] with a view to preventing illegal fishing operations and flag-of-convenience vessels. IOTC further recommended that the parties (both Contracting Parties and non-Contracting cooperating Parties) should submit annually a list of their respective tuna-fishing vessels[75] and urged all non-Contracting Parties fishing in the IOTC Convention area for species covered by the Agreement to become Contracting Parties or at least to cooperate with the Commission.

287. In other decisions, IOTC stressed the necessity for all studies to be based on the ecosystem approach to fisheries management and requested its secretariat to seek technical assistance from countries having experience on this type of approach. In addition, IOTC decided to collect henceforward data on catches of non-target, associated and dependent species (NTADs) on a regular basis and agreed to establish mandatory minimum data reporting standards as well as policy and procedures on data confidentiality. Catch, effort and size data should also be made available routinely to IOTC for stock assessment purposes.

North Pacific

288. At its sixth annual meeting, held in Moscow from 1 to 6 November 1998, the North Pacific Anadromous Fish Commission (NPAFC) considered the report of its Committee on Enforcement on issues related to enforcement and the report of the Committee on Scientific Research and Statistics on activities related to scientific research and data collection, as well as other matters related to relations with non-Contracting Parties.[76]

289. With respect to the enforcement of its conservation and management measures, NPAFC reviewed unauthorized fishing activities in 1998 and the enforcement activities undertaken by Canada, Japan, the United States and the Russian Federation in this respect, as Contracting Parties. The 1998 enforcement activities indicated that high seas drift-net fishing continued in the Convention area, and therefore it was important that efforts of the parties be maintained to ensure that there was sufficient enforcement presence thereof to serve as an effective deterrent to drift-net fishing operations.

290. Concerning its activities relating to scientific research, NPAFC adopted the recommendations of its Committee on Scientific Research and Statistics based on the research finding that climate changes and biological phenomena might have caused the very low returns of some economically important salmon stocks in 1997-1998.[77] On other matters, the parties agreed to renew the invitation extended to China and the Republic of Korea to join NPAFC.

Western Central Pacific

291. The Multilateral High Level Conference on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific of the States and territories members of the Forum Fisheries Agency, distant-water fishing States and fishing entities held its fourth meeting (Honolulu, 10-19 February 1999) to continue consideration of a draft convention[78] for the conservation and management of the highly migratory species listed in annex I of UNCLOS and in accordance with the relevant provisions of UNCLOS, as well as the provisions of the 1995 Fish Stocks Agreement. The immediate objective of the Conference is the establishment of a new fishery commission for the conservation and management specifically of tuna stocks in the region, such as skipjack, yellowfin, bigeye and southern albacore.

292. The fifth meeting of the Conference was scheduled for September 1999. Some of the outstanding issues which would need further negotiations include the preamble to the convention, determination of the northern and western boundaries of the convention area, flag State issues, compliance and enforcement, boarding and inspection, role of the port State, the decision-making process, operational aspects of vessel monitoring, ways to give effect to the special requirements of developing countries, formula for the financing of the new Commission, agreement on the location of the Commission's headquarters, headquarters agreement, as well as interim arrangements for the implementation of the convention. The Conference plans to complete its work in June 2000.[79]

Eastern Central Pacific

293. The Inter-American Tropical Tuna Commission (IATTC) held its sixty-third and sixty-fourth meetings from 8 to 11 June and from 21 to 23 July 1999 respectively. Resolutions on the management of fishing capacity of large-scale tuna longline fishery, yellowfin tuna, establishment of a permanent Working Group on Compliance, conservation and management of bigeye tuna and FADs were adopted during the meetings.[80]

294. With respect to the management of the fishing capacity of large-scale tuna longline fishery, IATTC welcomed Japan's initiative to immediately implement the reduction in the number of large-scale tuna longline fishing vessels by 20 per cent by scrapping 132 vessels in accordance with the FAO Plan of Action . It also called upon other large-scale tuna longline fishing States/fishing entities to undertake similar initiatives to reduce their fleets operating in the eastern Pacific Ocean.

295. Concerning the conservation and management of yellowfin tuna, IATTC recommended that a limitation on the catch of the stock should be implemented in 1999 in view of the fact that excessive fishing effort could reduce its potential production.

296. As to the conservation and management of bigeye tuna, which was reported to be experiencing a reduction in average size in the region, IATTC recommended that a catch limit of 40,000 metric tons should be applied in the purse-seine fishery operating in the eastern Pacific in 1999, with the option of further reductions of catches if the status of the bigeye tuna required them.

297. Furthermore, IATTC agreed to establish a permanent Working Group on Compliance to review and monitor compliance with its conservation and management measures, and to recommend to it appropriate means of promoting compatibility among national fisheries management measures of Contracting Parties. In addition, IATTC has recommended the establishment of a scientific working group to study the impact of FADs on yellowfin and bigeye tuna populations, particularly on catches of juvenile tunas, and on associated and dependent species, including consideration of the impact of a permanent or a temporary ban on the use of the devices in some areas, in combination with other regulatory measures being considered by IATTC.

South Pacific Ocean

298. The Commission for the Conservation of Southern Bluefin Tuna (CCSBT) reported that its activities during 1998 had been concentrated on attempts to reach agreement among its States parties (Australia, Japan and New Zealand) on a process for addressing uncertainties in the stock assessment, including development of a joint experimental fishing programme for 1999. In addition, CCSBT initiated in 1998 a Plan of Action to encourage countries and entities which were not parties to the Convention and whose fleets had taken significant quantities of southern bluefin tuna in the Convention area to accede to the Convention or otherwise cooperate with its conservation and management measures. Last year, CCSBT also began consideration of a trade certification scheme with a view to improving the data available to it. Indeed, available international trade data indicated that significant quantities of southern bluefin tuna were taken outside the current management arrangements and the collection and analysis of more comprehensive trade information on the tuna would assist in undertaking more accurate stock assessment in the future. Moreover, CCSBT has taken actions to protect ecologically related species and

considered ways and means of implementing the FAO international plans of action on seabirds and sharks.[81]

299. In other developments, Australia and New Zealand on 30 July 1999 filed with the International Tribunal for the Law of the Sea a request for the prescription of provisional measures (interim injunction) against Japan to cease immediately its unilateral experimental fishing programme for southern bluefin tuna initiated in 1998 (see A/53/456, para. 287) and continued in 1999 which, the applicants claimed, threatened "serious or irreversible damage to the southern bluefin tuna population"[82] (see paras. 42-45 and 581-585).

Antarctica

300. The seventeenth annual meeting of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), held at Hobart, Australia, from 26 October to 6 November 1998, reviewed the implementation and effectiveness of measures adopted at the previous annual meeting and considered additional measures to deal with illegal fishing for Patagonian toothfish in the Convention area (see A/52/487, para. 222; A/53/456, paras. 288-290).[83] While in previous years fishing had been concentrated in the southern Atlantic Ocean, illegal fishing was now also reported around the southern Indian Ocean, outside South Africa's exclusive economic zone (around Prince Edward and Marion islands). It has also been reported that, in addition to non-members, several CCAMLR members took part in the illegal fishing.[84]

301. In view of the above, CCAMLR stated that the level of reported IUU fishing in the Convention area continued to be unacceptable and endorsed the recommendations of its Standing Committee on Observation and Inspection and its Scientific Committee that the most stringent measures possible should be taken to deal with this type of fishing. It also agreed to request Namibia and Mauritius to provide the CCAMLR secretariat with all available information on landings of Patagonian toothfish into ports under their jurisdiction.[85]

302. Accordingly, CCAMLR adopted several new conservation and management measures applicable in the Convention area. Conservation measure 118/XVII establishes a scheme to promote compliance by non-Contracting Party vessels with CCAMLR conservation measures. Conservation measure 119/XVII sets out licensing and inspection obligations of Contracting Parties with regard to vessels flying their flag operating in the Convention area. Such vessels would be required under conservation measures 146/XVII and 148/XVII respectively to be marked in accordance with internationally recognized standards and to have on board an automated satellite-linked monitoring system. Conservation measure 147/XVII establishes cooperation between Contracting Parties to ensure compliance with CCAMLR conservation and management measures in respect of their own fishing vessels, including reciprocal port State inspection.

303. In addition, CCAMLR adopted a number of other conservation measures that dealt with, *inter alia*, the prohibition of directed fishing for toothfish except in conformity with specific conservation measures in the 1998/99 season (conservation measure 149/XVII), prohibition of directed fishing for finfish (conservation measures 72/XVII and 73/XVII) and for some species (conservation measures 152/XVII and 160/XVII) as well as limitation of total catch or precautionary catch limit for other species in specific sub-areas (conservation measures 151/XVII, 153/XVII, 154/XVII, 155/XVII, 156/XVII, 158/XVII and 159/XVII).

304. As to the issue of incidental mortality of marine animals during fishing operations, including incidental catch of seabirds, CCAMLR expressed satisfaction that there had been a substantial reduction of seabird by-catches in the regulated fisheries in 1997/98, although a high level of seabird mortality had been recorded in unregulated fisheries in the Convention area during the same period (see also para. 252).[86]

2. Conservation and management of marine mammals

305. The fifty-first annual meeting of the International Whaling Commission (IWC), held at St. George, Grenada, from 24 to 28 May 1999, upheld its 1982 decision that had set catch limits for commercial whaling at zero.[87] Accordingly, it denied once again to Japan a request for an interim relief allocation of 50 minke whales to be taken by coastal community-based whaling and reiterated its call on Norway to halt all whaling activities in areas under its national jurisdiction. IWC also indicated that, although it had endorsed the Revised Management Procedure for commercial whaling, work on a number of issues, including specification of an inspection and observer system, had to be completed before IWC would consider establishing catch limits other than zero (see A/53/456, paras. 293-296). In addition, IWC agreed to maintain the 1997 catch limits for stocks subject to aboriginal subsistence whaling for the period 1998-2002.

306. Concerning the status of whales, IWC indicated that despite a long period of protection, several populations of

great whales remained highly endangered. These included all bowhead whale stocks, with the exception of the Bering-Chukchi-Beaufort Seas stock; gray whales with the exception of the eastern Pacific stocks; all stocks of northern right whales; and various stocks of blue whales. IWC has passed a resolution calling upon States to prohibit takes from those stocks.

307. In other decisions, IWC called upon Japan to refrain from issuing scheduled permits for its scientific programme for minke whales in the Antarctic and the Western North Pacific respectively. Concerning its own scientific research programmes, IWC indicated that it had strengthened its commitment to research on environmental changes and their effects on cetaceans through collaborative research initiatives undertaken by its Scientific Committee on chemical pollutants, baleen whale habitat and prey in cooperation with interested organizations. IWC added that despite the conflicting views of its member States over its legal competence to manage small cetaceans, it had adopted a resolution concerning Dall's porpoises and encouraged States to use a precautionary approach to their management.

308. The eighth meeting of the North Atlantic Marine Mammal Commission (NAMMCO), held at Oslo, from 1 to 4 September 1998, was devoted to the consideration of various aspects of conservation and management of marine mammals in the Convention area, including marine scientific research, management measures, hunting methods and environmental matters.[88] NAMMCO also informed the meeting about current efforts by Japan and Saint Lucia to formalize regional cooperation on marine mammal conservation and management in the North-West Pacific and the Eastern Caribbean respectively.

309. Concerning its scientific research programme, NAMMCO indicated that it had focused attention on the role of marine mammals in the ecosystem. Based on research reviewed by its Scientific Committee and pending further studies on feeding habits, it had concluded that minke whales, harp seals and hooded seals in the North Atlantic might have substantial direct and/or indirect effects on commercially important fish stocks. NAMMCO had also begun to examine the economic aspects of marine mammals and fisheries interactions in the North Atlantic, including the economic consequences of discontinuing exploitation of harp seals or minke whales compared to continuing harvest of these mammals.

310. As to the exploitation of marine mammals, the NAMMCO Management Committee indicated that, based on an assessment of the Scientific Committee, the minke whales were close to their carrying capacity in the Central Stock Area and that removals and catches of 292 animals per year were sustainable. The Committee also noted that the combined annual catches of harp seals in Canada and Greenland, in the order of 300,000, were near or at the established replacement yields and that catches of hooded seals in the North-West Atlantic had exceeded the replacement yield in 1996 but had been much lower in 1997.

311. Additional information regarding the conservation and management of marine mammals was provided by UNEP, which reported that the Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals (MMAP) jointly developed by UNEP and FAO in collaboration with intergovernmental and non-governmental organizations concerned with marine mammal issues, was currently implementing the UNEP/Global Environment Facility (GEF) short-term project on the Rescue Plan for the Cap Blanc Colony of the Mediterranean Monk Seal in Mauritania, despite some financial constraints. At the regional level, activities have included implementation of the regional action plans under the framework of the regional seas programmes. In this connection, a three-year project on seals had been initiated in the Baltic Sea with the aims of: (a) improving the health conditions of seals in the area; (b) assessing potential and actual, direct and indirect impacts of seals on fisheries and the impacts of fisheries on seals; and (c) developing strategies to avoid conflicts between seals and fisheries.

3. Marine and coastal biodiversity

312. The fourth session of the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA-4) of the Convention on Biological Diversity met at Montreal, Canada, from 21 to 25 June 1999. SBSTTA-4 was followed by the first Inter-sessional Meeting on the Operations of the Convention (ISOC), convened also at Montreal from 28 to 30 June 1999. ISOC addressed institutional issues regarding the operations of the Convention, as well as aspects related to access to genetic resources, including benefit-sharing, *ex-situ* collections acquired before the entry into force of the Convention and intellectual property rights.[89]

313. The main issues addressed by SBSTTA-4 included alien/invasive species, dryland ecosystems, taxonomic initiatives, sustainable use of biological resources, technologies for the control of plant gene expression and environmental impact assessments. SBSTTA-4 adopted several recommendations at the end of its meeting, some of which were related to marine and coastal biodiversity.

314. With respect to the problem of coral bleaching, there was an agreement that SBSTTA should expand its analysis of the phenomenon to include the effects of the physical degradation and destruction of coral reefs as a potential threat to the biological diversity of those ecosystems (recommendation IV/1, (A) para. 6). The request to SBSTTA to study coral bleaching was initially made by the fourth session of the Conference of the Parties in 1998, in view of the extensive and severe coral bleaching caused by abnormally high water temperatures in the Indian Ocean since January 1998 pointing to a possible consequence of global warming. The study, in the light of the precautionary approach, would consider the potential severe loss of biological diversity and the socio-economic impacts of coral bleaching and provide relevant information to the next Conference of Parties.

315. Concerning the development of principles for the prevention of impacts of alien species, it should be recalled that decision IV/1C of the fourth session of the Conference of the Parties, which addressed the issue of alien species in a broad context, had decided that alien species would thenceforth be a cross-cutting issue for the implementation of many themes of the Convention, i.e., inland water, marine and coastal, forest and agricultural biological diversity. Consequently, SBSTTA-4 requested the Global Invasive Species Programme to ensure consistency with all relevant provisions of the Biodiversity Convention and to take fully into account the decisions of the Conference of the Parties on the use of marine and coastal biodiversity in developing a global strategy for alien species.

316. With regard to the development of approaches and practices for the sustainable use of biological resources, including in the area of tourism, SBSTTA agreed to participate in the international work programme on sustainable tourism development under the CSD process with regard to biological diversity, including the development of international guidelines for activities related to sustainable tourism, *inter alia*, in marine and coastal ecosystems and habitats of major importance for biological diversity and protected areas (recommendation IV/7 (b) and annex, paras. 2, 21 and 22).[90]

317. Concerning activities related to the follow-up to decision IV/5 on conservation and the sustainable use of marine and coastal biodiversity, including a multi-year programme of work for the implementation of the Jakarta Mandate on Marine and Coastal Biodiversity, the secretariat of the Convention on Biological Diversity in its contribution reported that the Convention continued to provide the most comprehensive framework for action at the national, regional and global levels for the conservation and sustainable use of marine and coastal biological diversity. The programme of work had been successfully implemented through the establishment of partnerships and synergies with virtually all agencies and programmes of the United Nations involved in oceans-related matters, as well as with other relevant bodies. Accomplishments in the implementation of the work programme were equally attributable to the successful actions carried out by Parties to the Convention as well as other Governments.

318. The Convention secretariat also indicated that the programme of work had now reached a stage where concrete outputs were beginning to emerge from its implementation. With the completion of the initial three-year phase (1998-2000), several tools would be available to parties, other Governments and relevant organizations and bodies for the implementation of the Jakarta Mandate. In this context, the secretariat listed the main expected outputs arising from the Jakarta Mandate work programme, as follows: (a) guidelines and criteria; (b) studies; (c) issue papers; and (d) databases.

319. The secretariat pointed out that these tools were being developed through collaboration with relevant organizations and bodies, including through the establishment of memoranda of cooperation and informal inter-agency task forces. In addition, the work of SBSTTA and the decisions of the Conference of the Parties on alien species would complement the provisions under the Jakarta Mandate and the ongoing activities under the related element of the Jakarta Mandate programme of work.

320. In addition to the information communicated by the Convention secretariat, the International Coral Reef Initiative (ICRI) secretariat in a joint contribution with IOC/UNESCO, UNEP and the Global Coral Reef Monitoring Network (GCRMN), provided an in-depth report on activities relating to coral reefs undertaken by those organizations.

321. ICRI stated that its aim was to catalyse action to reverse the global decline in coral reefs. Working towards that goal, ICRI in November 1998 had convened the International Tropical Marine Ecosystems Management Symposium (ITMEMS). Participants from all parts of the world gathered to discuss issues related to management of coral reefs, such as destructive fishing practices, overfishing, pollution, tourism, community participation and information needed for management. The outcomes of the working groups of ITMEMS were utilized to develop a blueprint for ICRI action over the next fours years leading up to the next ICRI Symposium on management of tropical marine ecosystems. ITMEMS reaffirmed the ICRI Call to Action and the Framework for Action and issued a Renewed Call

to Action, based on the outcomes of the working groups. The regional seas programme of UNEP provided regional reviews of coral reef activities for presentation at ITMEMS and supported the attendance at the Symposium of participants from developing countries.

322. ICRI also reported that it was in the process of developing a global database of coral reef projects. The database, hosted by the ICRI secretariat, would be aimed at providing information on coral reef projects throughout the world and contributing to the coordination among donors, NGOs and implementing agencies. In addition, "ReefBase: a Global Database on Coral Reef and their Resources", with information on more than 7,000 reefs, based at the International Center for Living Aquatic Resources Management (ICLARM) in Manila was the official database of GCRMN. The network had been established under the ICRI umbrella for monitoring reefs, as an integral component of the operational phase of the Global Ocean Observing System (GOOS) Initial Observing System (IOS) and had provided valid data for the management, conservation and sustainable use of coral reefs.

323. With regard to coastal ecosystems, ICRI noted that the largest coral bleaching and mortality event ever recorded had had a massive impact on coral reefs throughout the world in 1997-1998, corresponding with the most severe El Niño event on record, followed by an equally strong La Niña, as reported in *The Status of Coral Reefs of the World: 1998 Report*. GCRMN has designated the central and northern Indian Ocean, eastern Africa, South-East and East Asia and parts of the wider Caribbean as the most severely affected areas, with some areas recording an 80 per cent to 95 per cent death rate of all corals to a depth of 30 metres. Such mortality would have severe consequences for the economies of coastal communities and small island developing States dependent on tourism and coral reef fisheries. It has been estimated that over the next two decades the impacts could involve economic losses ranging from $700 million to $8.2 billion in the Indian Ocean alone.

324. In that connection, ICRI indicated that several actions were being undertaken to better understand and address the problem of coral bleaching. For instance, the Coral Reef Degradation in the Indian Ocean (CORDIO) project, with funding from the Swedish International Development Agency, the Netherlands and the World Bank, was aimed at assessing the 1998 impacts of the bleaching phenomenon on the reefs and the peoples of the Indian Ocean and would seek alternative livelihoods for those adversely affected by it. Furthermore, the United Kingdom Department for International Development was supporting an IOC project to initiate pilot coral reef monitoring through GCRMN in India, Sri Lanka and the Maldives.

B. Non-living marine resources

1. Minerals

Offshore oil and gas

325. Offshore production accounts for over a quarter of the total world production of oil and gas. The move of the offshore oil and gas industry to the deeper waters continued over the past year. Most major new finds have been in deep water, most recently off the coast of West Africa and in the Gulf of Mexico. The share of deepwater (>300 metres) oil and gas fields in total offshore fields has been increasing rapidly. As reported in *Offshore* (May 1999, vol. 59, No. 2, p. 40), as of 1998, worldwide the number of deepwater fields was 109, as opposed to 747 shallow-water fields. West Africa witnessed the highest pace of exploration activity over the past year with several major new discoveries, especially in the deepwater regions off Angola and Nigeria.

326. Early this year, Brazil's Petrobras broke the record, which it had set previously, by starting production from a water depth of 6,079 feet (about 1,853 metres) when the company brought the Roncador field in the Campos Basin off the coast of Brazil onstream.[91] In 1998, the record in ultra-deepwater drilling (7,718 ft, 2,352 metres) was set by a vessel known to the ocean community for its advanced technologies since the 1970s, the *Glomar Explorer*. This ship had been used in picking up samples of polymetallic nodules during the time of the Third United Nations Conference on the Law of the Sea. Its renovated version is considered to be the first of a new generation of ultra-deepwater drillships. The first newly constructed vessel of the new generation of ultra-deepwater drillships also became operational in 1998. Built in a Republic of Korea shipyard, the drillship is one of the two commissioned by two American oil firms for drilling in the Gulf of Mexico and deepwater tracts in other parts of the world. The double-hulled, dynamically positioned vessel is capable of drilling down to 10,000 feet (about 3 000 metres) in ultra-deep waters.

327. Rising capital costs for new rig construction, expanding geographical diversity of offshore drilling and technical challenges posed by new deepwater drilling activities are leading oil companies, and the firms that supply them with exploration and production equipment, to major consolidation. The mega-mergers of Exxon-Mobil, BP-Amoco-Arco, and Halliburton-Dresser, for example,

have begun to create a new, more consolidated industry. Also, in 1999, the world's largest offshore drilling company was formed through the merger of Transocean and Sedco Forex, with a market capitalization of over $6 billion. Apart from merger, another response to high costs and greater technological demands has been for companies to become more efficient. "The trend to higher efficiency and higher productivity has now travelled the length of the upstream business, from field operations up the product chain to the very front end of the business-seismic acquisition."[92]

Methane hydrates[93]

328. Methane hydrates, solid ice-like substances composed of water and natural gas (methane), occur in areas of the world's oceans where appropriate conditions of temperature and pressure cause water and methane to combine to form a solid (see also A/51/645, para. 276; A/52/487, paras. 252-253). Low temperature-low pressure regimes of the Arctic permafrost regions and high-pressure moderate-temperature regimes of deep ocean basins with high sediment thickness create the appropriate conditions.

329. The presence of hydrates in the oceans has been known since the late 1960s. But to date an economic and safe method for commercial recovery of gas from hydrates has not been established. "Several countries, including Japan, India and most recently the United States, have launched ambitious national projects to further examine the resource potential of gas hydrates. These projects may help answer key questions on the properties of gas hydrate reservoirs, the design of the production systems, and most importantly, the economics of gas hydrate production".[94]

330. In 1998, Japan conducted the first drilling of known hydrate deposits in the MacKenzie delta of Canada, in collaboration with the Canadian and United States geological surveys and certain universities and research institutes. Japan was planning to drill test wells in 1999 at two locations off Hokkaido island.

331. As to the options for production technology, in some deposits where widespread gas is known to occur under a hydrate layer, some methods to siphon off the gas from below the layer through a pipe are contemplated. This procedure has an added advantage: the removal of the underlying gas reduces the pressure on the icy layer, causing a transformation of the solid ice to gas near the base of the layer, thus replenishing the reservoir of gas below. Where no gas is known to occur under the hydrate cap, one option engineers are seeking is an inexpensive way to pump hot water or anti-freeze type chemicals directly into the hydrate layer to liquefy it.[95] In any case, more oceanographic and geological data are required before any production technology can be designed.

332. Bearing in mind the limitations of data and the problems associated with recoverability, the estimates of resources contained in methane hydrates are enormous. The United States Geological Survey has recently made a conservative estimate that deposits of methane hydrates worldwide represent hydrocarbon energy in twice the amounts to be found in all known fossil fuels on earth: *The Oil and Gas Journal* in 1998 quoted a range of estimates from 100,000 trillion cubic feet (tcf) to 270,000,000 tcf. To give an idea of the enormity of these deposits, the average of the estimates of methane contained in hydrates under United States jurisdiction (320,000 tcf) would supply all United States energy needs at current rates of consumption for 64,000 years.

Non-fuel minerals

333. Major types of marine non-fuel minerals can be considered according to their occurrence: (a) in shallow waters of the near-shore area (water depth < 300 metres) of the territorial sea or the exclusive economic zone within national jurisdiction, or (b) in deep waters of the ocean basins within and beyond national jurisdiction.

Near-shore minerals

334. Near-shore deposits of the territorial sea or the exclusive economic zone of coastal States primarily contain industrial materials, mineral sands and precious metals. Industrial minerals are those bulk materials recovered for use directly as an industrial commodity rather than for their metal content. The principal industrial material globally has been and remains sand and gravel for use in construction, coastal protection and beach replenishment. The most common and useful type of sand and gravel is composed of grains of quartz derived from the erosion of nearby continental rocks (pure quartz sand is used to make glass); other types of sand and gravel are composed of lime (calcium carbonate) derived from shells or precipitated from seawater. Sand and gravel are being mined in many coastal areas.

335. Mineral sands may contain small percentages of gold, platinum, precious gemstones or tin- or titanium-bearing minerals derived from the breakdown of continental rocks by weathering. The valuable constituent is separated from the mineral sand and the bulk of the material is returned to the mining site as waste. Mining of mineral sands containing tin remains a viable industry at sites offshore South-East Asia (Thailand and Indonesia). Of special note are diamonds,

which have developed into a fast-growing mining industry off the coasts of Namibia and South Africa at water depths of up to 300 metres, with annual output approaching $1 billion.

Deep-sea minerals

336. Mineral deposits of the seabed in deep water comprise polymetallic nodules (manganese, copper, nickel and cobalt in different amounts, at water depths 4,000 m-5,000 m), cobalt-rich crusts (manganese, cobalt, nickel and platinum in different amounts; 500 m-2,000 m water depths) and polymetallic sulphides (copper, iron, zinc, silver and gold in different amounts; 2,000 m-4,000 m water depths). None of these deep ocean minerals are being mined commercially as yet. Polymetallic nodules are generally precipitated from seawater at slow rates over millions of years and grow in the abyssal areas of the ocean basins of the world. The most economically interesting metal concentrations (nickel and copper) are found in the Clarion-Clipperton area of the eastern equatorial Pacific between Hawaii and Mexico, where exploration plans of pioneer investors have been approved by the International Seabed Authority. Like polymetallic nodules, cobalt-rich crusts are precipitated from seawater. They occur as encrustations up to 40 cm thick attached to rocky seabed elevations such as seamounts, flanks of islands and oceanic plateaux, where they may be difficult to harvest.

337. Following a pre-feasibility study for a proposed programme to mine seabed polymetallic nodules offshore the Cook Islands, a Norwegian delegation was scheduled to visit the country in 1999 to discuss further plans. The delegation represents a Norwegian deep-sea mining group involved in offshore projects. The programme is estimated to be worth $600 million.[96]

Polymetallic sulphides

338. Of special note are the polymetallic sulphides, also known as seafloor massive sulphides, which are deposited from seafloor hydrothermal vents (hot springs) on submerged volcanic mountain ranges. The associated hot springs are a source of chemical energy utilized by heat-tolerant bacteria to manufacture their food. The bacteria are at the base of a food chain of newly discovered life forms. The bacteria themselves are being investigated for their potential as sources of new heat-tolerant compounds for high-temperature industrial processes and of bioactive compounds for pharmaceuticals. The technology for mining polymetallic sulphides remains to be developed. The potential environmental impact of mining on the ecosystems at the active hot springs has yet to be determined.

339. As mentioned in last year's report (A/53/456, para. 302), the first licences for the exploration of polymetallic sulphides were issued by Papua New Guinea in 1997. The licence-holder is Nautilus Minerals Corporation Ltd., an Australian-led company registered in Papua New Guinea. Nautilus announced that a research partnership has been signed with the Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia's State-owned scientific research body, for cooperation in developing techniques for exploring the licence areas. "It appears that they constitute the highest-grade deposits ever found at sea, with a potential value estimated at billions of dollars. Samples from the MacManus field are reported to average 26 per cent zinc, 15 per cent copper and a record average of 25 grams of gold and 200 grams of silver per ton."[97]

340. Exploration and exploitation of polymetallic sulphides in maritime zones under the jurisdiction of a coastal State will be carried out under the regulatory framework of that coastal State. The exploration licences were granted by Papua New Guinea under its 1992 Mining Act. Subsequently, the Government of Papua New Guinea prepared a draft Green Paper on offshore mining policy, which can form the basis of a mining code. The draft Green Paper was reviewed at an international workshop held at Madang, Papua New Guinea, from 22 to 26 February 1999 under the auspices of the South Pacific Geoscience Commission (SOPAC), the Metal Mining Agency of Japan (MMAJ), the Forum Secretariat and the Department of Mining of Papua New Guinea. As a result of the deliberations of the workshop, an expanded and revised Green Paper was prepared.[98]

341. Exploration and exploitation of polymetallic sulphides in the international seabed area beyond national jurisdiction (the "Area") will be carried out under the regulatory framework to be developed by the International Seabed Authority. As mentioned in last year's report, during the August 1998 session of the Authority, the Russian Federation formally requested the Authority to adopt rules on exploration for polymetallic sulphides (and also cobalt-rich crusts). According to article 162, paragraph (2) (o) (ii), of UNCLOS, such rules, regulations and procedures shall be adopted within three years from the date of request to the Authority. To this end, the Authority is planning to convene a workshop in 2000 covering the available knowledge in mineral resources other than polymetallic nodules found in the Area, with particular emphasis on polymetallic sulphides and cobalt-rich crusts (ISBA/5/A/1, para. 54).

342. With regard to deep ocean minerals, while on the one hand prospecting and exploration efforts and research and development activities appear to be intensifying, on the other hand, concerns about environmental impacts of mining these minerals are also being reflected in various endeavours at the national, regional and international levels. For example, at the Workshop in Papua New Guinea mentioned above, the focus was on the polymetallic sulphide minerals found near hydrothermal vents, and environmental issues were among the important topics in addition to resource assessment, technology research and development, fiscal regime and domestic legislative framework. At the regional level, the Economic Commission for Latin America and the Caribbean (ECLAC) has reported that "a document on the environment aspects of marine mining was prepared — and will be published soon". At the international level, environmental issues occupy a significant position in the so-called mining code for polymetallic nodules in the international seabed area (Regulations on Prospecting and Exploration for Polymetallic Nodules, ISBA/5/C/4 and Add.1). The development of guidelines for the assessment of the possible environmental impacts arising from exploration for polymetallic nodules in the area was also the topic of a workshop convened by the International Seabed Authority, in collaboration with the Government of China, in June 1998 (see also para. 36). Although the mining code formulated by the International Seabed Authority pertains to the international seabed area, it is likely to influence the national and regional regulatory frameworks as well.

343. There does not yet exist a deeper-water marine mining industry involving polymetallic nodules, polymetallic sulphides, cobalt-rich crusts or methane hydrates. Before commercial production begins, an opportune moment might now arise to apply the precautionary approach to the potential environmental impact of this future industry. On the other hand, caution needs to be exercised so that burdensome requirements, environmental or otherwise, do not prevent this industry from coming into being altogether. An important issue in this context is the maintenance of the balance achieved in UNCLOS between developmental interests and environmental concerns.

Programmes on non-living marine resources in the United Nations

344. With respect to non-living marine resources, in a report prepared by the Secretary-General about a decade ago, the needs were identified for "more comprehensive knowledge of the potential of exclusive economic zones and continental shelves", for an "information base required for resource management and environmental protection" and for "assessing the resources of the exclusive economic zone" (A/45/712, paras. 37 and 38). Needs for resource information and for appropriate resource policies for sustainable development still remain important. Thus, the Commission on Sustainable Development, in its decision 7/1, urged

> "support, upon the request of the State concerned, for national efforts to gain greater access to resource information and to develop appropriate policies to facilitate the exploration and exploitation, with the State's consent and in a manner consistent with the sustainability of marine living resources, of non-living marine resources within its exclusive economic zones, or to the outer limits of the continental shelf, wherever applicable" (para. 25).

2. Offshore installations and structures

345. Offshore installations and structures are usually associated with the offshore oil and gas industry; they are not limited to that industry alone, however. They are also used for exploitation of other mineral resources, fish farming, tourism and recreation, and aerospace support (rocket or satellite launching (see para. 558; see also A/53/456, para. 459)). In addition, installations and structures are required in generating electricity from waves, tides, currents, thermal gradients and salinity gradients. They are also proposed for floating aerodromes for both commercial and military use and for offshore logistical bases (see paras. 556-557).

346. Aside from safety considerations, three areas in particular have been the focus of recent attention in the consideration of the environmental aspects of the offshore installations and structures: (a) pollution from offshore oil and gas activities; (b) development of guidelines governing the disposal of offshore installations and structures; and (c) the applicable legal regime for mobile offshore units.

347. The legal regime governing the construction, operation, use of offshore installations and structures and prevention of pollution therefrom in the exclusive economic zone and on the continental shelf, as well as the regime governing their removal and disposal, is provided for in articles 60, 80, 208, 210, 214 and 216 of UNCLOS. These articles are further complemented by the 1989 IMO Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone (IMO Assembly resolution A.672(16)), the 1989 IMO Recommendations on Safety Zones and Safety of Navigation around Offshore Installations and Structures (IMO Assembly resolution

A.671(16)) and the provisions of the 1972 London Convention and its 1996 Protocol.

Safety aspects

348. WMO reported that in late 1998 it had published, on behalf of the Offshore Weather Panel, a Handbook of Offshore Forecasting Services (WMO/TD-No. 850). The handbook provides a set of guidance procedures and standards for the preparation and dissemination of meteorological forecast services for the safe and efficient operation of offshore installations and structures.

349. The Regional Organization for Protection of the Marine Environment (ROPME) reported (via UNEP) that in the region covered by the Kuwait Regional Convention for Cooperation in the Protection of the Marine Environment from Pollution, safety measures are to be undertaken with regard to design, construction, placement, equipment, marking, operation and maintenance of offshore installations and structures in accordance with the provisions of the 1989 Protocol to the Kuwait Convention concerning Marine Pollution resulting from Exploration and Exploitation of the Continental Shelf. A Marine Oil Spill Safety Field Guide for the Region was in press and would be distributed in October 1999.

Pollution from offshore activities

350. UNCLOS article 208 requires coastal States to adopt laws and regulations and take the necessary measures to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction, pursuant to articles 60 and 80, which must be no less effective than the international rules, standards and recommended practices and procedures. States must endeavour to harmonize their policies in this connection at the appropriate regional level.

351. The release of harmful substances "directly" arising from the exploration, exploitation and associated offshore processing of seabed mineral resources is not covered by MARPOL or any other international instrument. There are a number of regional agreements, including the Helsinki and Barcelona Conventions and the Kuwait Protocol. IMO in its report to the Commission on Sustainable Development at its seventh session included prevention of marine pollution from offshore oil and gas activities as one of the areas requiring the attention of the Commission. In the report IMO recalled arguments put forward in the past both against and in favour of global regulations. The argument against global regulations was that, unlike ships, offshore installations were generally fixed and therefore only posed a threat of local pollution, which could be dealt with by national regulations or regional agreements. The argument in favour of global regulations or guidelines was that there were still many regions of the world (many of them oil-producing) which did not have the capacity to develop either regional or national standards and that some kind of global regulations or guidelines would help the countries in those regions. In this context, the IMO Marine Environment Protection Committee recommended a new assessment of current national, regional and global regulations (see MEPC 42/22, annex 10).

352. The Commission on Sustainable Development, at its seventh session noted the outcome of the international expert meeting on environmental practices in offshore oil and gas activities, sponsored by Brazil and the Netherlands and held at Noordwijk, the Netherlands, in 1997 (see A/53/456, para. 258), and recommended, in paragraph 36 of its decision 7/1: (a) that the primary focus of action on the environmental aspects of offshore oil and gas operations should continue to be at the national, subregional and regional levels; (b) in support of such action, there was a need to share information on the development and application of satisfactory environmental management systems, aimed at achieving national, subregional and regional environmental goals; and (c) to promote the sharing of that information, to raise awareness and to provide early warning of offshore oil and gas activities and projects posing potential threats to the marine environment, further initiatives should be undertaken, involving Governments, international organizations, operators and major groups.

353. In response to the Division's request to intergovernmental organizations to identify in their contribution to the report "matters which require further action and any related recommendations", OSPAR stated:

> "While OSPAR considers that the regulation of offshore oil and gas industries is best handled at the level of national Governments and regional seas organizations, it also considers that there would be benefit in promoting meetings, involving Governments, regional seas organizations, the oil and gas industries and interested non-governmental organizations, to consider how to promote the setting of effective goals for the protection of the marine environment at the national and regional levels and the management systems needed to attain them."

Regional developments

354. OSPAR reported that the OSPAR Commission, at its meeting in June 1999, had adopted a new strategy, the Strategy on Environmental Goals and Management Mechanisms for Offshore Activities, the objective of which is to prevent and eliminate pollution from offshore sources and to take the necessary measures to protect the maritime area against the adverse effects of offshore activities. (The text of the Strategy is available on the OSPAR Web site at www.ospar.org.) A survey on sea-based sources of marine pollution, the development of a chemical use plan, a manual on the application of the 1989 Kuwait Protocol and the development of guidelines for the integrated produced-water management of offshore installations are major programme activities of ROPME. UNEP reported that the development of a Protocol on the exploration and exploitation of the continental shelf and the seabed and its subsoil is being proposed to the second Conference of Parties to the Nairobi Convention, to take place in September 1999.[99]

Removal and disposal

355. At the 20th Consultative Meeting of the Contracting Parties to the London Convention (May 1999), attention was drawn to OSPAR decision 98/3 concerning the disposal of disused offshore installations (see A/53/456, para. 257). The decision, as well as other information from and decisions of other regional groups, would be taken into account when developing specific guidance on the application of the provisions of the generic Guidelines for the Assessment of Wastes or Other Matter that May be Considered For Dumping (adopted by the Consultative Meeting in 1997) applicable to platforms or other man-made structures at sea (see LC 20/14, para. 6.9).

356. At the same meeting, the Scientific Group of the Consultative Meeting of the London Convention Contracting Parties completed its work on the drafting of specific guidance for the application of the Guidelines in relation to platforms or other man-made structures at sea (LC/SG 22/13, annex 5). It is expected to be submitted to the twenty-second Consultative Meeting in 2000, together with the draft sets of guidance applicable to other wastes.

Regional developments

357. Article 210 of UNCLOS requires States to adopt national laws and regulations and measures which shall be "no less effective" in preventing, reducing and controlling pollution by dumping than the global rules and standards. Regional organizations that have adopted more stringent requirements governing the disposal of offshore installations than those contained in the 1972 London Convention and its 1996 Protocol are OSPAR and the Baltic Marine Environment Protection Committee (HELCOM) (see A/53/456, paras. 256 and 257). OSPAR recalled the adoption of OSPAR decision 98/3 and reported that, building on that decision, in 1999 it adopted the Strategy on Environmental Goals and Management Mechanisms for Offshore Activities (see para. 354). ROPME reported that it was planning to develop guidelines and standards for the removal of offshore installations and structures in cooperation with IMO. In 1998, the partners in the Asia Pacific Economic Cooperation (APEC) agreed that the disposal of decommissioned offshore installations should be considered on a case-by-case basis and that, a priori, no option should be excluded (information provided by the delegation of the United States to the twentieth Consultative Meeting, see LC 20/14, para. 12.11).

Mobile offshore units

358. The applicable legal regime governing mobile offshore units used in connection with offshore activities is not easily discerned. The 1989 IMO Code for the Construction and Equipment of Mobile Offshore Drilling Units (the 1989 MODU Code), the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) (see A/53/456, para. 250) and the 1997 Code of Safe Practice for the Carriage of Cargoes and Persons by Offshore Supply Vessels (the 1997 Code) (see A/52/487, para. 279) seem to suggest that a determination of whether international rules and standards for vessels also apply to mobile offshore units such as floating production, storage and offloading (FPSO) units, floating storage and offloading (FSO) units and mobile offshore drilling units (MODUs), is dependent on a number of factors: the type of unit involved, i.e., whether it is self-propelled; its mode of operation — whether or not it is on station — and whether it is engaged in exploration and exploitation of the seabed; and the kind of activity that is being regulated.

359. At the 78th session of its Legal Committee, in October 1998, the Comité Maritime International (CMI) drew attention in its submission (LEG 78/10) to the fact that the development of offshore activities during the past 30 years had produced offshore craft which did not easily fall within the generally accepted definition of a ship, and the application of certain maritime law conventions to such craft had proved difficult. CMI was studying the need and prospects for a new convention to cover such issues as liability and limits of liability for compensation from oil pollution incidents, as well as the possibility of enlarging the scope of such a convention to apply, in appropriate cases, not only to mobile offshore units but also to fixed structures.

The Committee was requested to indicate whether there was any support for the work of CMI to prepare a new draft convention.[186]

360. On the other hand, the International Association of Drilling Contractors (IADC) pointed out that, rather than developing a convention on offshore mobile craft, which was unlikely to be accepted, the shortcomings, ambiguity or confusion with respect to any existing international agreement and its applicability to mobile offshore units were best resolved within the context of that agreement by its parties. IADC noted that many perceived shortcomings related to national implementation (or lack thereof) rather than to the instruments themselves (see LEG 79/10). The Legal Committee at its 79th session, having noted the views of IADC, also supported by some delegations against the development of a convention on offshore mobile craft, decided on balance to retain the item on its work programme, but to consider the matter at a later stage (LEG 79/11, para. 152).

C. Protection and preservation of the marine environment

361. On 15 September 1999, the United Nations Environment Programme released Global Environment Outlook 2000 (GEO-2000), the most authoritative assessment of the global and regional environmental issues facing humanity in the new millennium. Based on contributions from United Nations agencies, 850 individuals and 30 environmental institutes, GEO-2000 provides a global and region-by-region overview of the environment, reviews the broad range of policy instruments and responses to address environmental issues outlining progress achieved and sets out recommendations for immediate, integrated action.

362. Regarding the marine environment, the conclusions of GEO-2000 are that the coastal marine environment is clearly being affected by the modification and destruction of habitats, overfishing and pollution. Many of these impacts can be traced back to land-based human activities located far from the sea. By contrast, the deep ocean is mainly unpolluted, although there is emerging evidence of environmental degradation in some areas, and a decline in many marine species.

363. With regard to coastal areas, which includes wetlands, estuaries, mangroves and coral reefs, GEO-2000 concludes that the natural environment of coastal areas is being degraded by agricultural and urban development, industrial facilities, port and road construction, dredging and filling, tourism and aquaculture. The many people living in coastal zones, and even those located far inland, generate large quantities of wastes and other polluting substances that enter the seas directly or through coastal watersheds, rivers and precipitation from polluted air. While coastal pollution is gradually being controlled in many industrialized countries, it is still rising rapidly as a result of population growth, urbanization and industrial development in developing regions.

364. According to the report, many coastal waters carry excessive sediment and are contaminated by microbes and organic nutrients. Nitrogen, resulting from sewage discharges, agricultural and urban run-off and atmospheric precipitation, is a particular problem. The destruction of wetlands and mangroves, which act as natural filters for sediment, excessive nitrogen and wastes, has also accelerated nutrient build-up. Additional pollution sources are oil leaks and accidental spills from shipping, discharge of bilge water, oil drilling and mineral extraction. Some persistent pollutants are even reaching deep ocean waters.

365. GEO-2000 also points to worrying evidence emerging concerning the accelerating destruction of the world's coral reefs by pollution. More than half the world's reefs are potentially threatened by human activities, with up to 80 per cent at risk in the most populated areas.

366. Citing some relevant scientific studies, GEO-2000 stresses that there is a growing understanding of the possible impact of climate change on the marine environment, for example through more evaporation from warmer seas increasing atmospheric humidity and thus reinforcing the greenhouse effect. Until recently, attention has mainly focused on the impact on small island States and low-lying countries of a rise in sea level and an increase in the frequency or intensity of storms resulting from climate change. There could be other effects, however. For example, if warming continues, freshwater from melted Arctic ice may form a cap on the Norwegian and Greenland seas, resulting in changes to deep ocean circulation patterns that might divert to the south the waters of the Gulf Stream, thus affecting the weather in Western Europe.

367. Surface warming and increased thermal stratification, according to GEO-2000, may also reduce phytoplankton productivity, which forms the basis of the entire marine food chain. A build-up of carbon dioxide in the atmosphere can lead to increased acidity of the surface ocean which, together with UVB penetration, can also reduce phytoplankton productivity; it can also change the carbonate content in surface waters, which could interfere with coral growth.

Extensive coral bleaching has also recently been associated with the warming of surface waters.

368. Other issues of serious concern regarding the marine environment cited in GEO-2000 are the collapse of fisheries and the introduction of alien species.

369. Concerning policy responses to environmental problems, GEO-2000 confirms the overall assessment of GEO-1 (the previous Global Environment Outlook, published in 1997) that the global system of environmental management is moving in the right direction, but much too slowly. The report stresses that environmental laws and institutions have been strongly developed over the past few years in almost all countries and that command-and-control policy via direct regulation is the most prominent policy instrument, although its effectiveness depends upon the manpower available, methods of implementation and control and the level of institutional coordination and policy integration. GEO-2000 also notes that while most regions are now trying to strengthen their institutions and regulations, some are shifting towards deregulation, increased use of economic instruments and subsidy reform, reliance on voluntary action by the private sector, and more public and NGO participation.

370. Regarding multilateral environmental agreements, GEO-2000 highlights two issues: on the one hand the effectiveness of such agreements depends strongly upon the institutional arrangements, the financial and compliance mechanisms and the enforcement systems that have been set up for them; on the other, it is difficult to assess accurately the effectiveness of multilateral environmental agreements and non-binding instruments because of the lack of accepted indicators.

371. At the core of GEO-2000's recommendations is a reinforcement of Agenda 21's call for environmental integration. The report emphasizes that the environment remains largely outside the mainstream of everyday human consciousness and is still considered an add-on to the fabric of life. Institutions such as treasuries, central banks, planning departments and trade bodies frequently ignore sustainability questions in favour of short-term economic options. In this sense, GEO-2000 stresses that integration of environmental thinking into the mainstream of decision-making relating to agriculture, trade, investment, research and development, infrastructure and finance currently offers the best opportunity for effective action.

I. Reduction and control of pollution

(a) Land-based sources of pollution

372. *Global Programme of Action.* The UNEP Governing Council at its twentieth session (Nairobi, 1-5 February 1999) adopted decision 20/19 B on the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities in which it, *inter alia*, stressed the need for urgent measures aimed at expediting the implementation of the Programme of Action. The Governing Council recommended that the Commission on Sustainable Development should consider ways to promote the early implementation of the Programme as one of the components of implementing chapter 17 of Agenda 21 and should discuss recommendations with the relevant United Nations agencies, bodies and programmes. The Council also decided to undertake the first intergovernmental review of the status of implementation of the Global Programme of Action in 2001 and invited UNEP to organize, by the end of 1999, an expert group meeting, with the participation of Governments and non-governmental organizations, in order to facilitate the preparations for such a review.

373. The UNEP Coordinating Office for the Global Programme of Action, created in November 1997, became fully operational in 1999. Its main task is to facilitate the regional implementation of the Programme, in particular through the development of regional and national programmes of action, by assisting in the preparation of regional assessments on land-based activities via national reports and by identification of priorities for action in a regional programme for action. Support for the initiation of regional efforts for the implementation of the Global Programme of Action has been provided by convening a series of regional technical workshops of Government-designated experts to strengthen national capabilities for the protection of the aquatic environment from land-based activities and to promote regional and subregional cooperation.

374. To date, six regional programmes of action (South-East Pacific, ROPME Sea Area, East Asian Seas, East Africa, West and Central Africa, and Upper South-West Atlantic) have been prepared as outcomes of these UNEP-supported workshops in eight regions where recommendations for action were identified. In 1999, support is being given to the preparation of such regional programmes of action for the Red Sea and Gulf of Aden region and the South Asian seas. In most of the workshops, Governments identified sewage as a major land-based source of pollution affecting human and ecosystem health and requested UNEP to give priority to that problem. During the reporting period, a follow-up

regional workshop for the South-East Pacific was held at Viña del Mar, Chile, from 19 to 22 October 1998, where sewage, hydrocarbons, heavy metals and persistent organic pollutants (POPs) were identified as the priority sources of pollution to be dealt with. In the meeting for the Upper South-West Atlantic held at Brasília from 30 September to 2 October 1998, Governments identified domestic sewage, industrial sewage, physical alteration and habitat degradation and hydrocarbons as their major land-based sources of pollution.

375. Besides the assessment of land-based activities being prepared by the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) for 1999, UNEP is also undertaking a project funded by the Global Environment Facility concerning global international waters assessment (GIWA). The project is being implemented to assist Governments and the GEF Council in establishing priorities for identifying and supporting projects within the GEF international waters portfolio.

376. GIWA is a systematic and comprehensive assessment of the environmental conditions and problems in international (transboundary) waters, marine as well as freshwater, and surface as well as ground-water. GIWA is one of the four focal areas, together with biological diversity, climate change and the ozone layer, for which GEF provides funds for projects and activities targeting global benefits for the environment.

377. The project commenced in June 1999 and will last four years. It will be executed principally by UNEP and the University of Kalmar in Sweden, in collaboration with a number of other international organizations such as GESAMP, the Scientific Committee on Problems of the Environment (SCOPE), the Advisory Committee on Protection of the Seas (ACOPS), the World Water Council, the International Council of Scientific Unions (ICSU) and the United States National Oceanic and Atmospheric Administration (NOAA). Initial funding of $14 million has been provided by GEF and bilateral donors, but further funding is being sought from other potential collaborating institutions. The core team, based in Kalmar, will coordinate the work of a number of task teams covering nine mega-regions and 66 subregions spread around the globe.

378. GIWA differs from previous such programmes in three important ways: (a) each subregion will include the whole of the freshwater catchment as well as the coastal and marine ecosystems into which it empties; (b) rather than concentrating on one specific issue such as biodiversity, GIWA will examine a comprehensive range of issues in each subregion, falling under the five main categories of freshwater shortage, habitat modification, pollution, fisheries overexploitation and global change; (c) instead of confining itself to removing the symptoms of environmental degradation, GIWA will identify and address the societal root causes of the problems. Examples of such causes are market failures, inadequacies in policy and governance, and deficiencies in information.

379. GESAMP in 1998 published two regional overviews of land-based sources and activities affecting the marine, coastal and associated freshwater environment; for the ROPME Sea Area (Persian Gulf/Arabian Gulf) and for the Eastern African Region (UNEP Regional Seas Reports and Studies Nos. 166 and 167 respectively). Five others are being finalized for publication in 1999 (Wider Caribbean, Upper South-West Atlantic, West and Central Africa, Red Sea/Gulf of Aden Sea Area, and South-East Pacific). These overviews provide basic material for a global assessment of land-based activities being prepared, under the leadership of UNEP, by GESAMP which is to be finalized by mid-2000.

380. In this respect, the UNEP Governing Council, at its twentieth session, in its decision 20/19 B, requested the Executive Director, in cooperation with Governments, United Nations bodies and agencies and other relevant organizations, to explore the feasibility for UNEP to convene, by 2000, a global conference to address sewage. In response to that decision, the Coordination Office of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities has developed a Sewage Strategic Action Plan to facilitate a process leading to the development and implementation of national strategies on sewage and the creation of global interest and commitment. In addition, a number of activities and products will be delivered through the Global Programme of Action Coordination Office as supporting tools. The Sewage Strategic Action Plan outlines: (a) the problems to be addressed and the identification of opportunities; (b) measures for addressing them at the national, regional and global levels; (c) the relevant actors involved; and (d) the work plan and timetable for its implementation. An interim Internet home page for the Coordination Office was established in November 1998 to provide information on the Programme. The address is <http://www.gpa.unep.org>.

381. The Global Programme of Action recommended the establishment of a clearing house as a priority for mobilizing experience and expertise, including facilitation of effective scientific, technical and financial cooperation, as well as capacity-building. At the global level, the clearing house is being structured around organizations responsible for source

categories, as specified in the Global Programme of Action and further elaborated in General Assembly resolution 51/189 of 16 December 1996 on institutional arrangements of the Programme of Action (see also A/53/456, paras. 332-337).

382. UNEP assisted WHO, UNESCO/IOC and IMO in preparing a document that addresses the development of their clearing-house source categories. To that end, several agencies have already pledged their commitment. However, as reported last year, some have expressed their inability to undertake the role of leading the coordination of their respective source categories without the provision of additional financial resources.

383. UNEP recently convened a Technical Meeting of Global Programme of Action Clearing-house Decision-Makers (The Hague, 10-12 May 1999), with the participation of representatives of lead agencies and Governments. The aim of the meeting was to provide constructive input and guidance in determining the overall structure and to develop a realistic work plan of tasks and activities, time-frames and responsibilities and seek the necessary commitment and resources of all participants to the clearing-house process. The meeting agreed on the basic structure and components of the clearing house. It was agreed that the Global Programme of Action Coordination Office would work closely with the lead agencies to prepare work plans and implementation strategies, especially for the central node, dealing with the sewage and POP source-categories, which were identified as short-term priorities. The development of the central node of the Global Programme of Action clearing-house mechanism was officially launched at the twenty-second special session of the General Assembly on Small Island Developing States in September 1999.

(b) Pollution by dumping; waste management

384. As regards main developments in the prevention and control of pollution by dumping, in particular issues which have arisen with regard to the implementation of the 1972 London Convention and its 1996 Protocol, attention is drawn in particular to the discussions at the 20th Consultative Meeting of Contracting Parties to the London Convention in December 1998. Measures taken with regard to the disposal of offshore installations and structures are reported on in the sub-section on offshore installations (see paras. 355-357), while recent developments under the Basel Convention in relation to the decommissioning/recycling/scrapping of ships and liability and compensation for damage resulting from transboundary movements of hazardous wastes and their disposal are reported on respectively under the sub-sections on the shipping industry (see para. 117) and liability and compensation (see paras. 452-454).

385. *Relationship between the 1996 Protocol and the 1972 London Convention.* The 1996 Protocol is intended to replace the 1972 Convention, and the standards it sets are more stringent than those established by the 1972 Convention. These represent a major change of approach to the question of how to regulate the use of the sea as a depository for waste materials. As of 30 June 1999, six countries had become parties to the 1996 Protocol. The Protocol will enter into force 30 days after its ratification by 26 countries, 15 of which must be Contracting Parties to the 1972 Convention.

386. Article 23 of the Protocol does not provide for the automatic withdrawal of States from the Convention on joining the Protocol. The Consultative Meeting of Contracting Parties to the London Convention recently noted that States that are parties to both instruments would not need to maintain dual systems of domestic implementation, because the standards set by the Protocol are more stringent than those in the Convention (see LC 20/14, annex 3).

387. Questions were raised at the 20th Consultative Meeting as to what the relationship between States would be once the Protocol enters into force. The Consultative Meeting agreed that the entry into force of the Protocol would create the following five categories of treaty relations between individual States: (a) the Protocol will apply between two States that are party to the Convention and the Protocol; (b) the Protocol will apply between a State which is party to both instruments and a State which is party to the Protocol only; (c) the Convention will apply between a State that is party to both instruments and a State that is party to the Convention only; (d) the Convention will apply between States that are parties to it and not the Protocol; and (e) there will be no treaty relations between a State that is party to the Protocol only and a State which is party to the Convention only.

388. The issue relating to the parallel application of the two instruments is also of importance for parties to UNCLOS, which are required by article 210 to adopt national laws, regulations and measures which must be no less effective in preventing, reducing and controlling pollution by dumping than the global rules and standards. Article 216 requires States to enforce those laws and regulations.

389. *Implementation and compliance with the London Convention.* Concern has been expressed that during recent years the number of Contracting Parties fulfilling their reporting obligations under article VI of the London

Convention has dropped to below 50 per cent (article 9 of the 1996 Protocol also contains a reporting obligation). Reporting, it was noted, constitutes the first step in a process which includes compliance assessment, and subsequently, effectiveness review (LC 20/4). The Consultative Meeting agreed that the lack of reporting deserved priority attention. It decided to establish an ad hoc Working Group on Reporting and Compliance, to meet at the 21st Consultative Meeting, in October 1999. The terms of reference of the Group are to recommend: (a) measures to improve the level, nature, standard and scope of reporting; (b) initiatives for compliance promotion, including technical cooperation and assistance; (c) lessons which can be learned from other international compliance mechanisms (the Basel Convention was mentioned as an example); (d) procedures for compliance assessment and follow-up; and (e) guidance on what the mandate, composition, scope and powers of any compliance body might be. The Group will review and assess issues of non-compliance identified by the Scientific Group, or others, as well as requests from Contracting Parties for assistance in improving compliance. It will furthermore develop and recommend to the Consultative Meeting procedures under article VII(3) of the Convention for the effective application of the Convention, particularly on the high seas, including the reporting of vessels and aircraft observed dumping in contravention of the Convention (see LC 20/14, annex 2).

390. *Dumping of radioactive waste.* The International Atomic Energy Agency in its contribution recalled that it had been requested by the Contracting Parties to the 1972 London Convention to develop and maintain an inventory of radioactive materials entering the marine environment from all sources. The rationale for having such an inventory was related to its use as an information base with which the impact of radionuclide sources entering the marine environment can be assessed. IAEA has undertaken the development of such an inventory to include: (a) radioactive waste disposal at sea; and (b) accidents and losses at sea involving radioactive material. A report on the first item was published in 1991 and updated in 1999 (*Inventory of Radioactive Waste Disposals at Sea*, IAEA-TECDOC-1105). A report on the second item is under preparation.

391. The dumping into the sea of high-level radioactive wastes is prohibited under the 1972 Convention, and amendments adopted in 1993 (which entered into force on 20 February 1994) extended the ban to low-level radioactive wastes. The amendments prohibit the dumping of "radioactive wastes and other matter", but this "does not apply to wastes or other materials (e.g., sewage sludge and dredged material) containing *de minimis* (exempt) levels of radioactivity as defined by IAEA". The 1996 Protocol also makes reference to *de minimis* concentrations as defined by IAEA.

392. IAEA presented a report on the issue to the 20th Consultative Meeting, entitled "Application of radiological exclusion and exemption principles to sea disposal: The concept of *de minimis* for radioactive substances under the London Convention 1972" (recently issued as IAEA-TECDOC-1068). The report notes that "all materials, including natural and inert materials, contain natural radionuclides and are frequently contaminated with artificial radionuclides", and provides guidance for making judgements on whether materials considered for dumping at sea could be treated as essentially "non-radioactive" for the purposes of the London Convention.

393. The Consultative Meeting established an Ad hoc Group of Experts on the Definition and Application of the *de minimis* Concept under the London Convention to, *inter alia*, consider the IAEA report and develop practical guidance for national regulatory authorities for application of the *de minimis* concept under the London Convention (see LC 20/14, paras. 7.1-7.17). The Group, which met in May 1999, prepared draft guidelines for the application of the *de minimis* concept for the consideration of the 21st Consultative Meeting (see LC/DEMIN 1/7, annex 2). The draft guidelines reproduce relevant sections of the IAEA report and are meant specifically for implementation of the *de minimis* aspects of annex I to the London Convention. The Group also, *inter alia*, recommended that IAEA be requested to develop a generic approach for the development of specific assessments for the protection of the marine environment, including human health, flora and fauna, as well as the legitimate uses of the sea (ibid., para. 4.5).

Waste assessment guidance

394. The work of the Scientific Group of the Consultative Meeting in developing waste-specific guidance, which would be equally applicable to the London Convention and its 1996 Protocol, is scheduled to be completed in 2000 and the complete package of draft guidelines will be presented to the 22nd Consultative Meeting in 2000. Subject to another review for internal consistency of all the draft sets of guidelines, the Group has so far completed draft specific guidelines for the assessment of each of the wastes permitted to be dumped under the 1996 Protocol, except those from vessels (see LC/SG 21/13, annexes 2-4; and LC/SG 22/13, annexes 2-5).[101]

395. The Scientific Group has also been requested by the Consultative Meeting to develop guidance concerning

"placement of matter for a purpose other than the mere disposal thereof", as well as guidance concerning materials used for the construction of artificial reefs (LC 20/14, para. 6.11). At the meeting of the Group in May 1999, several delegations expressed their support for the regulation of these activities so as to ensure that the marine environment is protected and that the construction of artificial reefs would not be used as an escape route to bypass restrictions on disposal at sea (LC/SG 22/13, para. 3.34 and 3.35).

(c) Pollution from vessels

396. In tonnage terms, the most important pollutant entering the marine environment resulting from shipping operations is oil, which is introduced predominantly as a result of routine tanker operations, such as discharges of machinery wastes and tank washings. Other polluting substances that can be introduced into the marine environment as a result of an accident involving a vessel or from the operational discharges from vessels are noxious liquid substances (chemicals), sewage, garbage, harmful substances carried in bulk, and solid bulk substances. Normal shipping operations can also cause air and noise pollution and can be responsible for the introduction of unwanted aquatic organisms into the marine environment. The use of toxic anti-fouling paints on ships' hulls also seriously harms marine life.

397. Apart from IMO's safety-related Conventions which are crucial for the prevention of accidents at sea (see paras. 125 and 156), the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), is recognized as the most important international convention for the prevention of marine pollution from ships. It regulates the discharges of harmful substances related to the normal operation of ships in six annexes: oil (annex I); noxious liquid substances (chemicals) carried in bulk (annex II); harmful substances carried by sea in packaged form (annex III); sewage (annex IV); garbage (annex V); and air pollution (annex VI). Only annexes I, II and V are in force. Annexes III, IV and V are optional. Amendments to annex IV are currently being drafted in order to assist its entry into force.

398. The international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels, which UNCLOS requires States to establish, and the "generally accepted" or "applicable" international rules and standards which they are required to "conform to", "give effect to", implement and enforce are contained in the provisions of MARPOL 73/78. The extent to which parties to UNCLOS are required to implement and enforce these provisions, even if they are not parties to MARPOL, depends upon the degree of international acceptance of those provisions.

399. This sub-section of the report provides information on major recent developments under some of the MARPOL annexes and recent efforts to improve implementation of MARPOL. It also traces progress achieved in drafting new regulations on anti-fouling paints and ballast water management and reports on recent measures to deal with pollution incidents. The sub-section on liability is also relevant in this context (see paras. 437-442 and 450-454).

Amendments and other major developments relating to the annexes to MARPOL 73/78

400. *Annexes I and II*. The following two amendments which were adopted in 1997 by the IMO Marine Environment Protection Committee (MEPC) in resolution MEPC.75(40) entered into force on 1 February 1999: (a) the north-west European waters became a special area under Regulation 10 of annex I (see A/52/487, para. 307, and A/53/456, para. 345); and (b) a new regulation 25A to annex I specifies intact stability criteria for double-hull tankers.

401. At its 43rd session (28 June-2 July 1999), MEPC adopted by its resolution MEPC.78(43) amendments to MARPOL annex I (requirements for oil tankers carrying persistent oil); annex II (shipboard marine pollution emergency plans for chemical tankers and the supplement to the International Oil Pollution Prevention Certificate (IOPP Certificate). (Recently adopted amendments to the IBC and BCH Codes are reported on in the sub-section on transport of cargo (see paras. 146-147)).

402. *Air pollution (Annex VI)*. MEPC at its 42nd session (2-6 November 1998) agreed to begin a programme to monitor the average sulphur content of residual fuels worldwide, as part of a programme of action towards implementation of annex VI to MARPOL 73/78. The monitoring scheme will be based on "Guidelines for monitoring the worldwide average sulphur content of residual fuel oils supplied for use on board ships", which were adopted by the Committee at its 43rd session (resolution MEPC.82(43)). The Guidelines set out a formula for calculating the yearly average sulphur content, based on sampling and testing of residual fuel. A trial run for sulphur monitoring conducted by the Netherlands showed that the worldwide figure for average sulphur content in 1998, calculated on the basis of 50,000 tested samples, resulted in a calculated average sulphur content of 2.9 per cent m/m (see MEPC 43/10).

403. In order to ensure that new or modified engines installed on board ships will already be compliant with the Nitrogen oxide (NO_x) Technical Code once it enters into force, MEPC revised the Interim Guidelines for the application of the NO_x Technical Code to encourage administrations to issue interim certificates confirming conformity with the requirements of the Code (see MEPC 42/22, annex 7).

404. IMO has been requested by MEPC to undertake a study on greenhouse gas emissions. Recent documents submitted to the Committee estimate CO_2 emissions from ships to represent approximately 2 per cent of total global CO_2 emissions (MEPC 42/9/2). Once completed, the results of the IMO study will be forwarded to the secretariat of the United Nations Framework Convention on Climate Change.

405. *Implementation of MARPOL 73/78.* Full implementation of MARPOL regulations is dependent upon effective flag State implementation and enforcement, and also on the provision of adequate reception facilities by port States for dirty ballast water, cargo residues and garbage — a requirement under MARPOL. Attention has therefore been focused in IMO on assisting States in meeting their obligations under the Convention (see also paras. 181-189).

406. *Enforcement of MARPOL 73/78.* In order to provide guidance to States on the implementation and enforcement of the provisions of MARPOL, MEPC at its forty-first session agreed that a new publication, "MARPOL — How to do it", should be prepared. At its forty-third session, the Committee considered the draft text of the enforcement section prepared by a correspondence group and discussed the following issues which the group had not been able to resolve: (a) whether the manual should include a reference to the provisions of UNCLOS; (b) whether references should be made to MARPOL annexes not yet in force; and (c) whether the text should, as suggested by some delegations, include, in addition to a reference to the exclusive economic zone, a reference to the equivalent zone that some States utilize in lieu of an exclusive economic zone.

407. Liberia in its submission (MEPC 43/12/2) expressed the view that the incorporation of too much text from UNCLOS could result in that Convention being imposed on States that are parties to MARPOL but not UNCLOS. Liberia's view was supported by a number of delegations, including some that are parties to UNCLOS.

408. On the second unresolved issue, the Committee generally agreed that references to annex VI should be excluded in the publication, as that annex was too new, whereas references to annex IV might be useful but should be included with the appropriate footnotes. With regard to the third unresolved issue, some delegations supported the inclusion of a reference to an equivalent zone in view of the fact that some countries have a fishing zone but no exclusive economic zone, while others considered that such an inclusion would be inappropriate. The Committee, recognizing the importance of all these issues, decided to consider them further at its next session (see MEPC 43/21, sect. 12).

409. *Reception facilities.* Attention has been drawn in past reports to the serious problem associated with the lack of adequate reception facilities in many ports, especially in seas which have been designated as special areas, e.g., the Wider Caribbean Region (see A/52/487, para. 314) and the Gulf Region. The provision of adequate reception facilities worldwide is a matter of extreme complexity, which involves the shipping industry, port operators, oil and chemical companies, and Governments. A satisfactory solution to the shortage of reception facilities in many parts of the world has yet to be found. It is widely recognized that if this problem is to be satisfactorily resolved it will be necessary to address the economic as well as the technical aspects. IMO identified in its report to the seventh session of the Commission on Sustainable Development the provision of facilities in ports for the reception of wastes from ships as an area requiring further progress (see MEPC 42/22, annex 10).

410. Recent actions in IMO to address the inadequacy of reception facilities include: (a) the approval of a revised format for reporting alleged inadequacies of port reception facilities, for use by ship masters in reporting to the administration of their flag State and, preferably, to the authorities of the port State (see MEPC/Circ.349); (b) the approval of a chapter on the establishment and operation of reception facilities (including funding mechanisms), to replace the current relevant chapter in IMO's Comprehensive Manual on Port Reception Facilities (see MEPC 42/3/3, MEPC 42/WP.9 and MEPC 42/22, para. 6.13); (c) the preparation of draft guidelines for ensuring the adequacy of port waste reception facilities and a Management/Auditing Strategy (draft text in MEPC 43/7); and (d) the submission of a draft resolution on the provision and use of port waste reception facilities to the Assembly at its 21st session for adoption. The draft resolution reflects the agreement reached at the 42nd session of MEPC 42 that in order to achieve "adequate reception facilities" the port should have regard to the operational needs of users and provide reception facilities for the types and quantities of waste from ships normally using the port. In the draft guidelines for ensuring the adequacy of port waste reception

facilities and the Management/Auditing Strategy to be finalized at MEPC 44, States parties are reminded of their obligations under MARPOL as well as UNCLOS: reference is made to articles 192, 194 and 211(2).

Progress in the drafting of new instruments

411. IMO has focused a great deal of attention on completing its work on the regulation of two activities which are harmful to the marine environment and marine life: the use of toxic anti-fouling paints on ships' hulls and the transport of harmful aquatic organisms in ballast water. The Commission on Sustainable Development in its decision 7/1 also underscored the importance of completing work on those issues.

412. *Anti-fouling paints*. Anti-fouling paints are used to coat the bottoms of ships to prevent marine life such as algae and molluscs from attaching themselves to the hull, thereby slowing down the ship and increasing fuel consumption. However, these paints contain organotin, which has been proved to pose a substantial risk of toxicity and other chronic negative impacts upon ecologically and economically important marine organisms, especially those in coastal waters. Some countries, such as Japan, have already banned organotin in anti-fouling paints for most ships. Alternatives to organotin paint, e.g., copper-based coatings and silicon-based paints, are under development.

413. The Commission on Sustainable Development recommended in paragraph 35(f) of its decision 7/1 that the programme for the development within the framework of IMO of controls on harmful anti-fouling paints used on ships should be carried out in accordance with the timetable foreseen, underlining the need to provide adequate expertise and resources to developing countries.

414. MEPC at its 42nd session, in 1998, recommended for adoption by the Assembly at its 21st session (November 1999) a draft resolution on anti-fouling systems. In the resolution the Committee is urged to work towards the expeditious development of a global, legally binding instrument which would ensure the global prohibition of the application of organotin compounds which act as biocides in anti-fouling systems on ships by 1 January 2003, and a complete prohibition of the presence of organotin compounds by 1 January 2008 (see MEPC 42/22, annex 5).

415. At the 43rd session of MEPC (June/July 1999), the issue of whether preparatory work for a Diplomatic Conference on anti-fouling systems in the next biennium (2000-2001) had sufficiently advanced to assure, insofar as possible, that the Conference would be a success was extensively debated and decided through a roll-call vote. The results were 35 voting in favour, 12 against and 15 abstentions (MEPC 43/21, sect. 3). One of the issues under discussion in the Working Group which is developing the text is whether the legal instrument should apply to all ships, including fishing vessels, or whether it should only apply to ships engaged in international voyages and should exclude those engaged solely in domestic coastal voyages (MEPC 43/WP.13).

416. The Baltic Marine Environment Protection Committee (HELCOM) reported (via UNEP) that the Helsinki Commission at its 20th meeting (22-24 March 1999) had adopted HELCOM Recommendation 20/4 concerning anti-fouling paints containing organotin compounds, which recommends that the Governments of the Contracting Parties to the Helsinki Convention take effective measures to eliminate pollution from such anti-fouling paints.

417. *Harmful aquatic organisms in ballast water*. It has been estimated that, worldwide, 3,000 different species of plants and animals are being transported in ballast water every day. The survival rate of species after discharge depends upon conditions in the receiving area, for example, its salinity and temperature. While studies indicate that typically less than 3 per cent of the released species actually become established in new regions, it takes just one predatory alien species to cause serious harm to the local ecosystem and the economy. For example, the entire New Zealand shellfish industry was once closed to domestic and export markets owing to a toxic algal bloom caused by the introduction of alien species through ships' ballast water.[102]

418. Currently the only effective way to stop the spread of unwanted organisms is to prevent them being discharged in foreign ports. Possible alternatives to deal with the problem, such as biological or chemical treatment methods to deal with the unwanted organisms, or improved ship designs, are currently being studied.

419. The Commission on Sustainable Development recommended in paragraph 35(e) of its decision 7/1 that the international community should be encouraged to cooperate fully, in accordance with relevant international agreements, such as MARPOL 73/78, in the various efforts to assist in the prevention of the spread of harmful aquatic organisms through ships' ballast water.

420. MEPC at its 43rd session reviewed the status of work in its Working Group in preparing a legal instrument on ballast water management. The Committee noted that there were a number of unresolved issues, for example, universal application versus restricted application based on the concept of ballast water management areas (selected areas where restrictions on the discharge of ballast water would

apply); and the extent of application of the provisions to certain categories of vessels, such as fishing vessels, pleasure boats, etc. In view of those and other equally important unresolved issues, the Committee agreed that while the preparation of a legal instrument was a high priority item, it had not reached the stage which would ensure the successful holding of a diplomatic conference in the biennium 2000-2001 (see MEPC 43/21, sect. 4).

421. HELCOM reported that the problem of alien species in the Baltic Sea area was addressed in a HELCOM project entitled "Database on alien species", as well as in a planned GEF project for the Baltic Sea area which, *inter alia*, would deal with emerging problems caused by introduced alien species.

Regional developments

422. The countries in the Caribbean are expected to have all ratified MARPOL annex V by 2001 (see Focus on IMO: Preventing Marine Pollution — The environmental threat, March 1998). The Regional Organization for Protection of the Marine Environment (ROPME) reported (via UNEP) that it had carried out a feasibility study on the establishment of reception facilities for oily wastes and other wastes in cooperation with the Gulf Cooperation Council, the European Union and IMO. The dumping of ballast water by oil tankers represents the main source of oil pollution in the ROPME Sea Area. The accession to MARPOL 73/78 and the establishment of reception facilities would significantly resolve this problem.

423. HELCOM provided information (via UNEP) on measures it had taken in 1998 (see also A/53/456, paras. 364-367). To eliminate illegal discharges to the sea, the Baltic States in 1998 adopted a set of measures amending Helsinki Convention annex IV on "Prevention of pollution from ships" making it mandatory for a ship before leaving port to discharge into port reception facilities those ship-generated wastes that are prohibited from being discharged into the Baltic Sea Area. This requirement will enter into force on 1 July 2000. (See HELCOM Recommendation 19/7. The indicated entry into force has been postponed six months according to article 24, paragraph 2, of the Helsinki Convention.)

424. Other measures HELCOM has adopted include: HELCOM Recommendation 19/9, "Installation of garbage retention appliances and toilet retention systems and standard connections for sewage on board fishing vessels, working vessels and pleasure craft"; HELCOM Recommendation 19/19, "Application by the Baltic Sea States of guidelines for holding tanks/oily water separating or filtering equipment for ships of less than 400 tons gross tonnage"; HELCOM Recommendation 19/11, "Notification of ships' wastes"; HELCOM Recommendation 19/12, "Waste management plans for ports"; and HELCOM Recommendation 19/13, "Basic principles for ashore handling of ship-generated wastes". These measures have been accompanied by an investment programme to improve the availability of reception facilities in the eastern part of the Baltic Sea Area. The implementation of this investment programme is coordinated by a Steering Group established jointly by the Helsinki Commission and IMO.

425. In addition to the measures taken by HELCOM in respect of reception facilities, which are important for the prevention of illegal discharges, the HELCOM Secretariat also reported that to enhance prosecution of offenders the Baltic Sea States decided to draw up a compilation of the national systems of each Contracting Party dealing with violations of anti-pollution measures at sea, and a more operator-friendly version thereof, to be used by those gathering evidence.

426. Efforts by the parties to the Bonn Agreement to stop pollution caused by illegal discharges, include the intensification of their joint aerial surveillance activities, such as Coordinated Extended Pollution Control Operations in sea areas with high shipping intensity. They have also drafted a Manual on Guidelines for Facilitating Effective Prosecution of Offenders (MEPC 43/INF.9).

Pollution incidents; Emergency response

427. *Pollution incidents by hazardous and noxious substances*. A Conference will be held in March 2000 to adopt the draft Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances. The draft Protocol is intended to be adopted by States already party to the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC). Like the OPRC Convention, the draft Protocol aims to provide a global framework for international cooperation in combating major incidents or threats of marine pollution. (For the text of the draft, see MEPC 42/22, annex 6. Draft Conference resolutions are contained in document MEPC 43/WP.7).

428. *Marine pollution emergency response support systems*. WMO reported that it is in the process of implementing, in cooperation with IMO, a Marine Pollution Emergency Response Support System (MPERSS), which aims to establish a globally coordinated system for the provision of meteorological and oceanographic information and services to support marine pollution emergency response operations

worldwide. WMO is cooperating with the IMO Marine Environment Protection Committee in MPERSS implementation and will undertake operational trials of the system in the Mediterranean in 2000.

429. *Action at the regional level*. HELCOM reported (via UNEP) that at its 20th meeting (22-24 March 1999), the Commission adopted HELCOM Recommendation 20/5 on "Minimum ability to respond to oil spillages in oil terminals". The recommendation supplements existing HELCOM Recommendation 11/13 on "Development of national ability to respond to spillages of oil and other harmful substances at sea" and specifies the requirements to minimize the risk and consequences of an oil spill during an oil tanker operation in oil terminals. Particular importance is placed upon the importance of contingency plans and pollution response equipment in the oil terminals.

430. ROPME communicated (via UNEP) that it had designated the Marine Emergency Mutual Aid Centre (MEMAC) to implement the Protocol concerning Regional Cooperation in Combating Pollution by Oil and other Harmful Substances in Cases of Emergency (1978). This involved preparation of a regional contingency plan, training (for which a training centre has been established in 1999), and emergency response support in the areas of information and technical assistance. ROPME was also preparing an atlas of sensitive areas as an aid to oil pollution response. ROPME also has decided to establish an emergency fund to allow prompt cost-effective response by member States facing an imminent major oil pollution threat (MEPC 43/INF.6).

431. UNEP reported that the Bureau of the Contracting Parties to the Barcelona Convention at its meeting in April 1999, had discussed amendments to the Protocol concerning Cooperation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Case of Emergency. The States members of the Northwest Pacific Action Plan agreed on the further development of a regional contingency plan at their meeting on marine pollution preparedness and response held in July 1999.

(d) Pollution from the atmosphere

432. Emissions and concentrations of greenhouse gases causing risks of global climate change (see paras. 516-521) continued to be high on the agenda of the international community. The issue of atmospheric emissions entering the sea through precipitation over the open ocean is being addressed mainly through negotiations dealing with CO_2 emissions, transboundary air pollution and specific pollutants.

433. Pollution of marine ecosystems from the atmosphere seems to be far from negligible. Scientific studies continue to point out that increased nitric oxide emissions worldwide, predominantly as a result of human activities (use of fossil fuels, cultivation of certain crops, manufacture of nitrogen-rich fertilizers) cause nitrogen saturation which, in turn, results in eutrophication (oxygen depletion) of marine ecosystems and the loss of much of their natural capacity to support a wide variety of vegetation and wildlife. Toxic algal blooms, loss of fish habitat, changes in species composition of plankton, elimination of entire food chains and the death of fish and shellfish have been cited among symptoms of eutrophication.

434. Rising concentrations of carbon dioxide (CO_2) in the atmosphere threaten the world's coral reefs. It appears that increased acidity of marine water caused by rising concentrations of CO_2 in the atmosphere is having negative effects on the formation of reefs by slowing down the production of calcium carbonate by coral polyps.

435. In this context, it is encouraging that efforts are being made to reduce atmospheric pollution. In September 1999, final agreement was reached on the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to the Convention on Long-range Transboundary Air Pollution. The goal of the Protocol, negotiated under the auspices of the United Nations Economic Commission for Europe (ECE), is to cut emissions of sulphur, nitrogen oxides, ammonia and volatile organic compounds. According to the emission ceilings, most countries will have to make sweeping cuts, some as much as 90 per cent, by 2010. The Protocol is scheduled to be adopted at a meeting of ministers of the environment in Gothenburg, Sweden, on 30 November 1999.

436. In accordance with its mandate, as reflected in UNEP Governing Council decision 19/13 C of 7 February 1997, the Intergovernmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic Pollutants met at its second and third sessions in January and September 1999, respectively. The Committee's mandate had stressed the need to develop science-based criteria and a procedure for identifying additional persistent organic pollutants (POPs) as candidates for future international action and that the process should incorporate criteria pertaining to persistence, bioaccumulation, toxicity and exposure in different regions and should take into account the potential for regional and global transport including dispersion mechanisms for the atmosphere and the hydrosphere, migratory species and the need to reflect possible influences of marine transport and tropical climates.

At the third session of the Committee, a tentative agreement on the "key" elements of a future agreement was reached, including the elimination of a number of intentionally produced POPs. The proposals, after being reviewed by the States participating in the negotiations, will be considered at the fourth session of the Committee, to be convened from 20 to 25 March 2000 in Bonn.

(e) Liability and compensation

437. With the objective of assuring prompt and adequate compensation in respect of damage caused by pollution of the marine environment, States are required by article 235 of UNCLOS to cooperate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes. States are also required to cooperate, where appropriate, in the development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds.

Implementation of existing liability regimes

438. *Compensation for pollution damage from oil.* Compensation for pollution damage caused by spills from oil tankers is currently governed by the 1969 International Convention on Civil Liability for Oil Pollution Damage (CLC Convention) and the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (Fund Convention), as well as by the two Protocols of 1992 amending those Conventions. The Protocols, which entered into force in May 1996, substantially increased the level of compensation and expanded the scope of the oil pollution compensation regime to cover spills in the exclusive economic zone and pollution from spills of cargo or bunker oil[103] from seagoing vessels constructed or adapted to carry oil in bulk as cargo, thus becoming applicable to both laden and unladen tankers. Compensation for environmental damage is limited to costs incurred for reasonable measures to reinstate the contaminated environment. Expenses incurred for preventive measures can also be recovered even when no oil spill occurs, provided there was grave and imminent threat of pollution damage.

439. Significant changes to the International Oil Pollution Compensation Funds (IOPC) took place in 1998 when major oil-importing countries denounced their participation in the 1969 and 1971 Conventions, thus ceasing to be members of the 1971 Fund, and became full members of the 1992 Fund.[104] As a result, the quantity of contributing oil received from the remaining members of the 1971 Fund has been reduced from 1,200 million metric tons to 300 million metric tons. At the ninth Meeting of States Parties to UNCLOS, the representative of the IOPC Funds pointed out that, as a result of the declining membership in the 1971 Fund, it would not be able to operate normally or amass sufficient contributions to provide compensation, while there might be additional liabilities arising out of new incidents. The representative made an urgent appeal to all parties to the 1969 and 1971 Conventions to deposit their instrument of denunciation as soon as possible and to take the necessary steps to accede to the 1992 Protocols (SPLOS/48, para. 54).

440. *International Convention on Liability and Compensation for Damage in connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS).* The HNS Convention, adopted on 3 May 1996, has not been ratified or acceded to by any State. Once in force, the Convention will make it possible for up to 250 million Special Drawing Rights (SDR) (about US$ 336 million) to be paid out in compensation to victims of accidents involving hazardous and noxious substances, such as chemicals. It introduces strict liability for the shipowner and a system of compulsory insurance and insurance certificates. As with the CLC and Fund Conventions, when an incident occurs where compensation is payable under the HNS Convention, compensation would first be sought from the shipowner, up to the maximum limit of 100 million SDR (about $134 million). Once this limit is reached, compensation would be paid from the second tier, the HNS Fund, financed by cargo interests, up to a maximum of 250 million SDR (about $336 million). This amount includes compensation paid under the first tier.

441. A recent initiative to address problems of implementation of the HNS Convention was the convening of a special consultative meeting of representatives of Governments and of interested industries. Legal and technical problems identified during the discussions were the definition of "receiver", the acceptability of insurance cover and how to identify contributors to the HNS Fund (LEG 80/10/2). The IMO Legal Committee at its 79th session had agreed to include monitoring of implementation of the HNS Convention in its agenda on the understanding that it would not lead to a renegotiation of the provisions of the treaty or to the elaboration of authentic or binding interpretation rules (LEG 79/11, para. 140).

Amendments to existing instruments and the development of new liability regimes

442. Over the past year, substantial progress has been made in amending the 1974 Athens Convention relating to the Carriage of Passengers and their Luggage by Sea and its 1990 Protocol, with the aim of introducing the concept of compulsory insurance for passenger claims, and in the development of two new instruments, an international convention for liability and compensation for damage caused by oil from ships' bunkers, and a protocol on liability and compensation for damage resulting from transboundary movements of hazardous wastes and their disposal.

443. *Provision of financial security (compulsory insurance) for passenger claims.* The Legal Committee has in its consideration of regulations on financial security (or compulsory insurance) given priority to the interrelationship between rules on financial security for passengers and the 1974 Athens Convention and its 1990 Protocol, with a view to drafting amendments, taking into account the work of ICAO in amending the Warsaw Convention. The new Montreal Convention, adopted by ICAO in May 1999, introduces a two-tier liability regime for death or injury of passengers. The first tier includes strict liability up to 100,000 SDR (approximately $135,000), irrespective of a carrier's fault. The second tier is based upon presumption of fault of a carrier and has no limit (see press release PIO 06/99 at the ICAO Web site: http://www.icao.org).

444. The Athens Convention of 1974 and its 1990 Protocol make a carrier liable for damage or loss suffered by a passenger if the incident causing the damage occurs during the course of the carriage and is attributable to the fault or neglect of the carrier. Liability can be limited so long as the carrier did not act with intent to cause damage, or recklessly. For the death of, or personal injury to, a passenger, this limit of liability is set at 46,666 SDR (about $63,000) per carriage. The 1990 Protocol, which has not yet entered into force, increased the limits of compensation payable in the event of death to approximately $225,000.

445. The Legal Committee has made substantive progress in drafting amendments to the Athens Convention and its 1990 Protocol and it is expected that a diplomatic conference could be convened in the near future. As the 1990 Protocol has only been ratified by three States to date, it is likely that the proposed draft amendments will supersede and incorporate elements of the 1990 Protocol. It is hoped that the amendments to the Convention and the new Protocol will encourage wider acceptance of the Athens Convention.

446. IMO provided information on the discussions on the draft amendments in the Legal Committee at its 79th session, in April 1999. The Committee considered separately the question of financial security in respect of passenger claims and other claims. Most delegations were in favour of compulsory liability insurance along the lines of that provided for in the CLC Convention and the HNS Convention. Nevertheless, some delegations indicated their wish to maintain the personal accident insurance (PAI) scheme as an option to be available in addition to or in place of liability insurance.

447. The Committee considered a submission proposing the replacement of the current basis of liability regulated by the Athens Convention with a two-tier liability regime, like the one adopted for the new ICAO Montreal Convention (see para. 443). Although some were in favour of the proposal, it did not receive sufficient support to be carried and accordingly the Committee maintained its view that the basis of liability in the Athens Convention should remain unchanged.

448. *Provision of financial security (compulsory insurance) for other claims.* A joint IMO/ILO Ad Hoc Expert Working Group has been established to consider the subject of liability and compensation regarding claims for death, personal injury and abandonment of seafarers. It is to meet during the next session of the Committee, in October 1999.

449. IMO reported that its Legal Committee had considered the revised version of draft IMO guidelines on shipowners' responsibilities in respect of maritime claims, submitted by several delegations. There was general support for the introduction of the guidelines. Some delegations voiced their concern about the possibility of the guidelines being made mandatory as part of port State control. In this regard, it was observed that unnecessary delays regarding the arrival, stay and departure of ships should not result from the implementation of the guidelines.

450. *Compensation for pollution from ships' bunkers.* As noted in paragraphs 438 and 439, the 1992 CLC and Fund regime only covers oil pollution damage caused by the bunkers of oil tankers, whether laden or unladen. Pollution caused by oil spills from bunkers of other types of ships are not covered, even though bulk carriers can carry up to 10,000 tons of fuel oil. The need for a liability and compensation regime was first brought to the attention of IMO in 1994. The Legal Committee has been working on the development of an international convention for liability and compensation for damage caused by oil from ships' bunkers.

451. IMO reported that the Legal Committee at its 79th session (April 1999), had considered a submission by a number of delegations containing an updated version of draft articles for a proposed convention for liability and

compensation for pollution from ships' bunkers (LEG/79/6/1). The Committee agreed to proceed on the basis of a definition of shipowner as the liable person, which explicitly includes the registered owner, the bareboat and demise charterers, and the manager and operator of the ship. The Committee also considered a number of consequential amendments to the text. However, the Committee felt that before it finally concluded the subject, the group of delegations sponsoring the draft should consider whether a proposal for the definition of "company" in the International Safety Management (ISM) Code would present a viable alternative.

452. *Protocol to the Basel Convention.* UNEP reported that the Ad Hoc Working Group of Legal and Technical Experts had held its ninth session in Geneva from 19 to 23 April 1999. The Working Group had been established, pursuant to decision IV/9 of the fourth meeting of the Conference of the Parties to the Basel Convention, to consider and develop a draft protocol on liability and compensation for damage resulting from transboundary movements of hazardous wastes and their disposal. The final version of the draft Protocol is scheduled to be presented to the fifth meeting of the Conference of the Parties, to be held at Basel in December 1999.

453. The Ad Hoc Working Group will be holding one more session to finalize the draft Protocol, from 30 August to 3 September 1999. At its ninth session, agreement had not yet been reached on the draft articles dealing with the scope of application, strict liability and compensation mechanisms. Another unresolved issue was the question of who should be financially responsible in the event of an incident.

454. The draft text to be considered by the Group at its forthcoming session provides for the application of the liability regime from the point the wastes are loaded within the territory of a State of export until the completion of the disposal operation. It permits any party to exclude from the application of the Protocol, by way of notification, liability for damage attributable to incidents occurring within its territory, including its territorial sea. In the event of an incident occurring in areas beyond national jurisdiction, compensation for damage will not cover neither the loss of income directly deriving from an economic interest in any use of the environment, nor the costs of measures to reinstate the impaired environment. The Protocol will also apply to illegal traffic.[105]

2. Regional cooperation

(a) Review of regional seas programme and action plans

455. The regional seas programme, initiated in 1974, is based on periodically revised action plans adopted by high-level intergovernmental meetings and implemented, in most cases, in the framework of legally binding regional seas conventions under the authority of the respective contracting parties or intergovernmental meetings. UNEP has facilitated the negotiations of 12 regional seas conventions and action plans and is currently supporting negotiations in the East Central Pacific and the Upper South-West Atlantic.

456. Following the adoption of the Global Plan of Action for the Protection of the Marine Environment from Land-based Activities at the Washington Conference in November 1995, UNEP initiated actions to revitalize the regional seas programme. In addition, by its decision 20/19 A of 5 February 1999, the UNEP Governing Council stressed the need for UNEP to strengthen the regional seas programme as its central mechanism for implementation of its activities relevant to chapter 17 of Agenda 21.

457. In response to that need and to discuss matters of common concern, UNEP convened the Second Global Meeting of Regional Seas Conventions and Action Plans at The Hague from 5 to 8 July 1999. The issues discussed included status, progress reports and role of regional seas conventions and action plans in the implementation of the Jakarta Mandate on Coastal and Marine Biodiversity, the International Coral Reef Initiative, the Barbados Programme of Action for the Sustainable Development of Small Island Developing States and the Buenos Aires Programme of Work of the United Nations Framework Convention on Climate Change. Other issues discussed included implementation of the Global Plan of Action for marine mammals, relationship with the law of the sea, and strengthening linkages and horizontal cooperation among regional seas conventions and action plans as well as promoting cooperation among them.

Central and Western African Action Plan and Eastern African Action Plan

458. UNEP has prepared a regional overview for the land-based sources and activities affecting the marine, coastal and associated freshwater environment, and a Strategic Action Plan for the Eastern African region. However, several factors have led to inadequate implementation of the programme of work for both the 1985 Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi

Convention) and of the 1981 Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan Convention). Such factors include: (a) lack of adequate funding (payment of assessed and pledged contributions to the Trust Fund) to sustain the execution of agreed programmes under the Conventions; (b) low ratification (out of 21 countries of the West and Central African region, 10 have become parties to the 1981 Abidjan Convention; the 1985 Nairobi Convention, which took 11 years to enter into force, has 6 parties to it); (c) lack of effective coordination of programmes at the national and regional levels; (d) lack of strong national capabilities for the sustainable use of marine and coastal resources including failure to integrate the goals of the Conventions in national development policies and programmes; and (e) delayed action in putting in place a fully equipped and operational Regional Coordinating Unit for the Abidjan Convention in Côte d'Ivoire.

459. Options for revitalizing and strengthening the two Conventions were initiated at the Maputo Pan-African Conference on Sustainable Integrated Management (PACSICOM) in July 1998. A follow-up ACOPS Conference on Cooperation for Development and Protection of the Marine and Coastal Environment in Sub-Saharan Africa was held in Cape Town, South Africa, from 30 November to 4 December 1998. In the Cape Town Declaration, UNEP, as the secretariat to the Nairobi and Abidjan Conventions, was requested to develop, in close consultation with the relevant governing bodies of those Conventions, a concrete action plan for the revitalization and coordination of the Conventions, through the establishment of a joint implementation mechanism.

460. In order to implement the Cape Town Declaration on the African Process for the Development and Protection of the Coastal Environment, particularly in Sub-Saharan Africa, and in line with UNEP Governing Council decision 20/27, of 4 February 1999, UNEP decided to give high priority, in the current biennium 1998-1999 and the 2000-2001 biennium, to assisting and strengthening the capacities of African countries in implementing their commitments to deal with various environmental challenges. This includes in particular their updating to ensure their viability and appropriateness to serve as an effective mechanism for responding to new and emerging challenges.

461. The process of updating has already begun for the Nairobi Convention. The First Conference of the Parties to the Nairobi Convention, held in March 1997, recognized the fact that, from its adoption to the time of its entry into force in May 1996, there had been an increased awareness of environmental issues, changes in the environment of the region and developments in international environmental law. Consequently, in accordance with its article 7 (1) (d) and decision CP.1/4 of the First Conference of the Parties to the Nairobi Convention, the Parties decided to establish an Ad hoc Technical and Legal Working Group to "consider the feasibility and modalities of adapting the text of the Convention and its related Protocols (with a priority to the Protocol concerning Protected Areas and Wild Flora and Fauna in the Eastern Region) to take account of the relevant environmental changes and the latest developments in international environmental law and agreements (among others the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities)", and "to formulate and adopt guidelines, standards or criteria concerning the identification, selection, establishment and management of Protected Areas and Wild Fauna and Flora in the Eastern African Region (article 9 of the Protocol concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region)".

462. A meeting of legal and technical experts to review the Nairobi Convention and the Protocol Concerning Protected Areas and Wild Flora and Fauna in the Eastern African Region was convened by UNEP in Quatre Bornes, Mauritius, from 15 to 18 December 1998. The experts recommended for the consideration of the second Conference of the Parties, to take place in September 1999, the following actions: (a) to continue the process of review of the Nairobi Convention and the Protocol concerning the Protected Areas and Wild Flora and Fauna in the Eastern African Region and formulate guidelines and standards concerning the identification, selection, establishment and management of protected areas as required in accordance with article 9 of the Protocol; (b) to prepare guidelines for the implementation of the provisions of the Nairobi Convention; (c) to look into issues that may need to be developed, such as protection of the marine environment from land-based sources and activities, exploration and exploitation of the continental shelf and seabed and its subsoil, and liability and compensation.

Caribbean Action Plan

463. The Contracting Parties to the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region are developing a Protocol concerning Pollution from Land-based Sources and Activities (the LBS Protocol). The Second Meeting of Legal/Technical/Policy Experts to further discuss the draft Protocol was held at Kingston, Jamaica, from 16 to 18 June 1998. The Conference of Plenipotentiaries to clarify and bring to a conclusion all outstanding issues and to adopt the

LBS Protocol was held in Aruba from 27 September to 6 October 1999.

464. In collaboration with the Governments of the United Kingdom and Jamaica, a Caribbean Marine Biodiversity Workshop was held at Montego Bay, Jamaica, from 27 to 29 October 1998. Participants from throughout the Wider Caribbean Region discussed lessons learned in the conservation and sustainable use of marine biodiversity in the region. Participants identified constraints and threats to these efforts and made recommendations for future action.

465. The UNEP Caribbean Environment Programme (CEP), with support from the UNEP International Environmental Technology Centre in Osaka, Japan, convened a Workshop on Environmentally Sound Technologies for Domestic Wastewater Treatment at Montego Bay, Jamaica, from 16 to 20 November 1998. More than 60 participants attended this forum for the exchange of information and data on new or innovative wastewater collection and treatment systems. The Workshop was convened in support of CEP's coordination of projects and activities to prevent, reduce and control pollution from land-based sources and activities.

466. Early in 1999, CEP completed a major project for information dissemination in the Wider Caribbean Region, with the establishment of a Wider Caribbean Region marine and coastal environmental information network. The aim is to enhance networking among the countries of the region and facilitate the flow of environmental information. In addition, the CEP Web site (http://www.cep.unep.org) is being increasingly utilized for information dissemination and for making relevant publications available in electronic format. It has also been updated to include the Barbados Coastal Zone Management Unit Web site (http://www.cep.unep.org/barbados/czmu/coastal.htm). The latter site contains information on the coastal and marine environment of Barbados and coastal zone management issues.

467. CEP serves as a contact point for the International Coral Reef Initiative (ICRI) in the Wider Caribbean Region and supports the activities of the Global Coral Reef Monitoring Network (GCRMN) of ICRI. Consistent with its goal of strengthening marine protected areas (MPA) management, CEP supports activities such as the development of a comprehensive MPA database (see para. 505). CEP developed and implemented the only region-wide comprehensive ICRI project on sustainable coastal tourism, with major funding from the United States Agency for International Development (USAID). This three-year, multidisciplinary project, recently completed, had as its aims to improve environmental quality and coastal and marine natural resource protection in the region by promoting the use of environmentally sound practices by the tourism industry and reducing the environmental impacts of tourism on coastal and marine resources.

Red Sea and Gulf of Aden

468. Under the Red Sea Regional Framework Plan funded by the Global Environment Facility (GEF/PERSGA project), a regional training workshop on combating oil spills was organized at Jeddah, Saudi Arabia, from 21 to 25 February 1998 and was attended by participants from Jordan, Djibouti, Saudi Arabia, the Sudan, Egypt and Yemen. Another regional training workshop on integrated coastal zone management was held at Port Said, Egypt, from 21 to 25 June 1998, with a total of 18 participants from Jordan, Djibouti, Saudi Arabia, the Sudan and Yemen.

Kuwait Convention

469. ROPME is currently developing a Protocol on Biological Diversity and Establishment of Specially Protected Areas (see para. 501). Draft Guidelines for Integrated Management of Coastal and Marine Areas in ROPME have been prepared in collaboration with UNEP. The Guidelines were reviewed by an expert meeting held at Muscat on 29 and 30 May 1999.

470. ROPME has designated the Marine Emergency Mutual Aid Centre (MEMAC) to implement the Protocol concerning Regional Cooperation in Combating Pollution by Oil and other Harmful Substances in Cases of Emergency (1978) (for further details, see para. 430).

471. Regarding regional port state control arrangements, a regional survey was carried out by MEMAC in 1998/1999 to review different inspection procedures, regulations and safety systems within the ROPME member States. A meeting in this respect was held in cooperation with IMO and the Gulf Cooperation Council Secretariat in June 1999, wherein the first draft of the Regional Port State Control Arrangements was developed.

472. ROPME's main areas of focus in capacity-building for the environmental protection agencies of its member States are training in marine pollution monitoring and assessment, quality assurance and environmental management. Another major objective is the development of legal capabilities in the management of marine natural resources and enforcement of regulations.

Mediterranean Action Plan

473. The Bureau of the Contracting Parties to the Barcelona Convention held its meeting in Athens on 29 and 30 April

1999. The issues discussed included: the amendments to the Protocol concerning Cooperation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency; and the Mediterranean Action Plan (MAP) Information Strategy. Three working group meetings of the Mediterranean Commission on Sustainable Development were organized on different environmental issues.

474. The Mediterranean Commission on Sustainable Development held its fifth meeting in Rome from 1 to 3 July 1999 and made recommendations and proposals for action on sustainable development indicators, tourism and sustainable development and information, awareness and participation. The recommendations were to be submitted to the Eleventh Meeting of the Contracting Parties to the Barcelona Convention (Malta, 27-30 October 1999).

475. An Action Plan for the conservation of marine vegetation in the Mediterranean Sea was approved by the focal points for the Specially Protected Areas at their Fourth Meeting, held from 12 to 14 April 1999 (see para. 502).

476. With a grant from the Global Environment Facility, UNEP, in collaboration with WHO, has prepared a report on the "Identification of Priority Pollution Hot Spots and Sensitive Areas in the Mediterranean" (MAP Technical Reports Series No. 124, UNEP, Athens, 1999) (see para. 503).

South Asian Seas

477. Under the South Asian Action Plan, a Training Course on Integrated Management of Coastal and Marine Protected Areas specifically for the South Asian Seas Region was conducted in September 1998. The South Asia Cooperative Environment Programme (SACEP) coordinated the preparation of a report entitled "A Review of the Progress in Implementation of Management Actions for the Conservation and Sustainable Development of Coral Reef Ecosystems in South East" for the International Tropical Marine Ecosystems Management Symposium, held in Townsville, Australia, in November 1998. With the technical support from IUCN, the Asian Development Bank has agreed to support for two years the development and implementation of Integrated Management of the Environmentally Sensitive Coastal and Marine Ecosystems (2001-2002).

South-West Atlantic

478. A regional workshop attended by Government-designated experts from Argentina, Brazil and Uruguay for an overview of land-based activities was held at Brasilia from 30 September to 2 October 1998. Domestic sewage, industrial sewage, hydrocarbons and physical alteration and habitat degradation were identified as the priority pollutant sources.

Northwest Pacific Action Plan (NOWPAP)

479. Two workshops were held in the region: one on regional monitoring in Vladivostok, Russian Federation, from 1 to 3 July 1999, and the other on data and information management at Beijing, from 6 to 8 July 1998. At the Beijing workshop, national reports were presented and discussed and recommendations for future programmes were made.

480. At the Fourth Intergovernmental Meeting, held at Beijing on 6 and 7 April 1999, member States decided on the establishment of a network of regional activity centres.

481. Finally, the Third Meeting on Marine Pollution Preparedness and Response was held at Yuzhno-Sakhalinsk, Russian Federation, from 13 to 15 July 1999. At the meeting, NOWPAP member States agreed on the further development of a regional contingency plan.

South Pacific

482. UNEP cooperated with the South Pacific Regional Environment Programme (SPREP) in a number of activities, including preparation of the GEO-2000 report for the Pacific and the submission of the Pacific region to the seventh session of the Commission on Social Development. Joint activities on waste management were also undertaken.

Establishment of a regional seas programme for the East Central Pacific

483. Preparation of a draft action plan and framework convention for a regional seas programme for the East Central Pacific region was initiated in early 1998 in consultation with high-level representatives of the Governments of Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama. The UNEP Governing Council at its twentieth session endorsed, in its decision 20/20 of 4 February 1999, actions taken in facilitating the establishment of a proposed regional seas programme for the East Central Pacific region. The Council also took note of the wide support of the Governments concerned for the draft action plan and the framework convention. Those Governments have been invited to endorse the proposed Meeting of High-level Government-designated Experts to Review the Proposals for a Convention and Plan of Action for the Protection of the Marine and Coastal Environment of the East Central Pacific Region.

(b) Other regions

Baltic Marine Environment Protection Commission (HELCOM)

484. A "Proposal for Offshore Baltic Sea Protected Areas" has identified 24 new areas, mainly situated outside the territorial sea, to be included in the existing system of coastal and marine Baltic Sea Protected Areas (see para. 507).

485. In order to reduce the inputs of nitrogen, phosphorus and plant protection products from agricultural activities, the Baltic Sea States in 1998 amended annex III to the Helsinki Convention concerning "Prevention of Pollution from Land-based Sources" to include regulations on prevention of pollution from agriculture. The amendments will enter into force on 1 July 2000. (See HELCOM Recommendation 19/6. The indicated entry into force has been postponed six months according to article 24, paragraph 2, second indent, of the Helsinki Convention.) The matter will further be addressed in a planned GEF project for the Baltic Sea Area which, *inter alia*, will deal with operationalization of measures to reduce non-point-source pollution from agriculture. In 1998, the Baltic Sea States further agreed on ways to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020. The main objective of the Strategy is to develop a pragmatic selection of substances/groups of substances and prioritization mechanisms and to identify and develop relevant measures for reducing discharges.

486. Further measures taken to reduce and control land-based sources of pollution include: (a) measures aimed at the reduction of discharges from freshwater fish farming (HELCOM Recommendation 20/1); (b) approval of pesticides ("plant protection products") for use in the catchment area of the Baltic Sea (HELCOM Recommendation 20/2); and (c) reduction of nutrients and other pollutants leaching from forestry land (HELCOM Recommendation 20/3). (Concerning illegal discharges to the sea, see paras. 423-425; concerning antifouling paints, see para. 416; concerning ability to respond to oil spillages, see para. 429.)

487. All coastal and marine environmental monitoring of HELCOM is now conducted under one programme, the COMBINE programme, with ICES as the thematic data centre of HELCOM. Emissions and deposition as well as discharges and the riverine load from point and non-point sources within the whole drainage area of the Baltic Sea are monitored under the programme for pollution load compilation.

OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic

488. The OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic entered into force on 25 March 1998. The Convention replaces and updates the 1972 Oslo Convention and the 1974 Paris Convention. The new OSPAR Commission had its first meeting, at the ministerial level, in Sintra, Portugal, from 21 to 24 July 1998. The Commission held its second meeting in June 1999.

489. The OSPAR Convention provides for the possibility of expanding its field of competence through the adoption of new annexes. Accordingly, the 1998 Ministerial Meeting unanimously adopted an Annex on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area. In addition, the Meeting adopted a strategy to implement the new annex and guide the longer-term work of the Commission in that field. Three strategies were also adopted to guide work on combating pollution of the maritime area. The Ministerial Meeting also adopted a legally binding decision banning all dumping of disused offshore steel installations. (For details of the annex, the strategy to implement the annex, the three strategies on combating pollution, and the decision, see A/53/456, paras. 257, 316 and 413.) Building on the decision, at its meeting in June 1999, the Commission adopted a fifth strategy, on environmental goals and management mechanisms for offshore activities (also see paras. 354 and 357).

3. Marine protected areas/PSSAs

490. Concerns over the degradation of the marine environment and marine ecosystem, especially in coastal areas as a result of pollution from land-based and other activities, and the over-exploitation of living marine resources, has intensified the need for action to mitigate and control these negative impacts especially in environmentally sensitive sea areas, including areas of high biological importance and productivity.

491. The kind of measures a State may wish to adopt to protect an area and its species depends upon the activities which it seeks to regulate. With the exception of any regulation affecting navigation, a State can unilaterally take any measure it wishes to protect an area under its national jurisdiction, e.g., by establishing a marine protected area. If a State wishes to adopt measures to protect an area or species in its exclusive economic zones from shipping activities, in compliance with article 211 (6) of UNCLOS, it must first seek the approval of IMO, as the competent international organization, to avail itself of the measures

which the organization has developed for this purpose, e.g., establishment of a special area under MARPOL or adoption of ship routeing measures. In addition, it can also request IMO to identify the area as a particularly sensitive sea area (PSSA).

492. The establishment of a marine protected area or the taking of any other conservation measure within an exclusive economic zones, e.g., regulations of seasons and areas of fishing in accordance with UNCLOS, article 62(4)(c), cannot have the effect of restricting the right of navigation of other States, unless such restrictions are approved by IMO. Since a marine protected area may not necessarily require any special protection from shipping activities, and vice versa — an area of the sea where IMO measures are applicable may not have been established as a marine protected area — this section deals separately with marine protected areas and measures to protect sea areas from shipping activities.

493. The duties of States under UNCLOS to conserve and manage their natural resources, including, for example, the need to consider the effects of conservation measures for living resources on dependent or associated species (article 61(4)) and the obligation of States under article 194(5) to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life, have been further strengthened by the requirement of parties under the Convention on Biological Diversity to establish marine protected areas within zones under national jurisdiction, and by a number of regional conventions and protocols which also provide, *inter alia*, for the establishment of protected areas by the parties.

494. Marine protected areas provide useful and important management tools for different levels of conservation, management and the sustainable use of marine and coastal biological diversity and resources. They can be small or vast in size and can be established for a variety of management objectives, ranging from strict protection to multiple uses. As with terrestrial protected areas, the level of protection for a marine protected area can vary and should reflect its particular conservation objectives. Financial and technical resources and trained staff, as well as the involvement of stakeholders, especially local communities, in the establishment and management of the marine protected area are essential for its effective management. In fact, marine protected areas work best when developed within the context of an integrated management plan.

495. The Commission on Sustainable Development in its decision 7/1 (para. 22) encouraged States to establish and manage marine protected areas, along with other appropriate management tools, consistent with the provisions of UNCLOS and on a basis consistent with the programme of work under the Convention on Biological Diversity and its Jakarta Mandate in order to ensure the conservation of biological diversity and the sustainable management and use of oceans.

496. The Secretariat of the Convention on Biological Diversity, which has been requested by the Conference of the Parties to develop criteria for the establishment of marine and coastal protected areas and their management aspects, reported that the task would be virtually impossible without building upon previous experiences of relevant organizations and initiatives. With the aim of achieving the aforementioned objective, the Secretariat is cooperating, or has initiated discussions, with the following organizations and initiatives: the Division for Ocean Affairs and the Law of the Sea of the United Nations Secretariat, the World Heritage Convention, the Convention on Wetlands, IMO, the UNEP regional seas Conventions and action plans, the UNESCO Man and the Biosphere programme, and IUCN and its World Commission on Protected Areas.

Coral reefs and marine protected areas

497. In the joint contribution by the Secretariat of the International Coral Reef Initiative (ICRI), IOC, UNEP and the Global Coral Reef Monitoring Network, it was pointed out that the Initiative in its Renewed Call to Action (adopted in 1998, more fully described in the subsection on marine and coastal biodiversity (paras. 312-324)) identified the following priority actions related to marine protected areas: (a) to improve the management and sustainable use of fisheries resources on coral reef and related ecosystems through the participatory establishment and use of marine protected areas both at the community level and for larger areas; and (b) to conserve and restore the values and functions of tropical marine ecosystems by applying marine protected areas in the context of an ecosystem management approach. ICRI further emphasized the connection between marine protected areas, tourism and the private sector and called for the recognition and engagement of the private sector as an important potential partner in the creation and management of coral reef marine protected areas.

498. The ICRI Secretariat notes that while one major objective of marine protected areas is to protect biodiversity, particularly fish species of commercial interest, few protected areas have been designated to protect sites of mass spawning aggregations of coral reef fish. Conversely, local fishers often recommend areas for conservation that exclude known spawning sites, because these were targets for easy

exploitation. This leads to overfishing of reef fish resources and a concomitant loss of food for local populations, as well as a decrease in income from marine tourism. There is an urgent need to identify spawning aggregation sites and to provide them with maximum protection, either as marine protected areas or as specially protected areas with seasonal closures corresponding to spawning periods. Another consideration in designating marine protected areas should be preference for sites that are sources of larvae for downstream habitats that act as sinks for those larvae. Therefore, urgent research is required to determine connectivity between habitats so as to select preferred sites for marine protected areas and provide corridors for larval transport and biodiversity conservation. Preliminary assessments of interlinkages between coral reefs on a regional scale is within the scope of the International Coral Reef Action Network (ICRAN), a project that aims to implement the ICRI Framework for Action in a strategic way. More detailed assessments are also under consideration as part of a suggested GEF project on targeted research that is under development by the World Bank.

Developments at the regional level

499. Several regional conventions contain provisions relating to the designation of marine protected areas by the Contracting Parties. Information provided by UNEP on recent developments in its regional seas programme and in other regions are provided below (see also the subsection on regional cooperation for the protection and preservation of the marine environment, paras. 455-489).

500. *East Africa.* The meeting of legal and technical experts to review the 1985 Nairobi Convention and the Protocol concerning Protected Areas and Wild Flora and Fauna in the Eastern African Region, held in December 1998 (see para. 462), recommended for the consideration of the second Conference of the Parties at its second meeting (September 1999) the formulation of guidelines and standards concerning the identification, selection, establishment and management of protected areas, as required by article 9 of the Protocol.

501. *ROPME region.* ROPME is currently in the process of developing a Protocol on Biological Diversity and Establishment of Specially Protected Areas. The instrument will provide for the conservation, protection and restoration of the health and integrity of the ecosystem and biological diversity in the ROPME region. It will safeguard the threatened and endangered species, the critical habitat, the sites of particular importance, as well as the representative types of coastal and marine ecosystems, their biodiversity and their sustainable use to ensure long-term viability and diversity.

502. *Mediterranean region.* An Action Plan for the conservation of marine vegetation in the Mediterranean Sea (in support of the 1995 Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean) was approved by the focal points for Specially Protected Areas at their fourth meeting in April 1999. The Action Plan is expected to be adopted at the eleventh meeting of the Parties to the Barcelona Convention (October 1999).

503. With a grant from the Global Environment Facility, UNEP, in collaboration with WHO, has prepared a report on the "Identification of Priority Pollution Hot Spots and Sensitive Areas in the Mediterranean" (MAP Technical Reports Series No. 124, UNEP, Athens, 1999). The report was prepared within the framework of a Strategic Action Programme for the Mediterranean, as a follow-up to the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources and Activities.

504. The United Nations University (UNU) reported that, together with the University of Sassari, Sardinia, it had launched a joint research and training project on the integrated management of marine protected areas, focusing on capacity-building, networking, strengthening of institutional capabilities, administration and public awareness. Regional in scope, it centres on the Mediterranean Sea with a view to promoting cooperation with academic and research institutions in the region. A training course on marine parks as tools for integrated coastal area management was to be held at Sassari in October 1999. An important component of the project is the Database on Education and Training in Integrated Coastal and Ocean Management, a collaborative effort with the Division for Ocean Affairs and the Law of the Sea and the Sustainable Energy and Environment Division of UNDP within the framework of the TRAIN-SEA COAST programme. Designed as an information hub to provide a clearer map of capacity-building programmes in place in several countries and regions in the world, the database provides information on training and education in integrated coastal and ocean management (ICOM) carried out at various institutions throughout the world. (Detailed information on ICOM is now available at http://www.ias.unu.edu/vu/icom.)

505. *Caribbean region.* The Specially Protected Areas and Wildlife Protocol of the Cartagena Convention requires two more ratifications for it to enter into force. Governments in the process of ratification are France, the United Kingdom,

Jamaica and Trinidad and Tobago. The Caribbean Environment Programme, consistent with its goal of strengthening Marine Protected Areas (MPA) management, supports activities which include the development of a comprehensive MPA database, a regional network, an MPA "training of trainers" programme and technical assistance.

506. Another development to be noted is the recent decision of CARICOM to declare the Caribbean Sea a special area in the context of sustainable development. A draft resolution on the Caribbean Sea was presented to the United Nations General Assembly meeting at its twenty-second special session devoted to the review and appraisal of the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States (September 1999). With the title of the draft resolution as well as other elements of the text still under negotiation, the Assembly decided to refer the resolution to its Second Committee for consideration under the agenda item "Environment and sustainable development". The two titles which have been proposed for the draft resolution are "Recognition of the Caribbean Sea [region] as a special area in the context of sustainable development" or "Promoting an integrated management approach to the Caribbean Sea in the context of sustainable development" (A/S-22/6, annex). In this connection, it can be noted that the concept of a "special area" has up to now only been used in the context of MARPOL "special areas". Article 211 of UNCLOS also makes reference to "special areas" (see paras. 510-515).

507. *Baltic Sea*. The Baltic Marine Environment Protection Commission (HELCOM) reported (via UNEP) that a "Proposal for offshore Baltic Sea Protected Areas" had identified 24 new areas, mainly situated outside the territorial sea, to be included in the existing system of coastal and marine Baltic Sea protected areas. In the existing system 62 marine areas have been identified, all within the territorial seas of the Baltic Sea States. Among the measures to be taken in the protected areas is the development of management plans, taking into account all possible activities having a negative impact upon the areas.

Marine protected areas beyond the limits of national jurisdiction

508. The development of protective measures was also recently proposed for sea areas beyond the limits of national jurisdiction. During the discussions on oceans and seas at the seventh session of the Commission on Sustainable Development "some delegations proposed the development of a global representative system of marine protected areas within and across national jurisdictions. A note of caution was voiced for applying the concept of marine protected areas on the high seas without any agreement on their sustainable use" (CSD decision 7/1, annex, para. 26). The need for protective measures in areas of the ocean and seabed beyond the limits of national jurisdiction, e.g., seamounts and hydrothermal vents, is also being advocated by some non-governmental organizations, most notably IUCN and WWF. They have underlined the need to consider further the role that UNCLOS might play in the establishment of marine protected areas on the high seas (see *Creating a Sea Change: The WWF/IUCN Marine Policy*, WWF, in 1998).

509. Any consideration of whether marine protected areas should be established in areas beyond the limits of national jurisdiction must be carried out within the framework of the legal regime in UNCLOS and take into consideration the implications of the establishment of such areas for other maritime activities. For example, a proposal to establish a marine protected area around a hydrothermal vent needs to take into account that there may be competing interests in that same area, e.g., exploration and exploitation of polymetallic sulphides, and prospecting for genetic resources.

Areas which require special measures to protect them from shipping activities

510. UNCLOS recognizes that some areas of the sea may require special measures to protect them from shipping activities. Article 211(6) permits the coastal State to adopt measures in a clearly defined area of its exclusive economic zone, if the competent organization agrees that the area, because of its oceanographical and ecological conditions, as well as the utilization or protection of its resources and the particular character of its traffic, requires more stringent measures than what is provided by the applicable international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels referred to in paragraph 1 of article 211. Upon determination by the organization that the area qualifies for special measures, the coastal State may implement at the national level those international rules and standards for the prevention, reduction and control of pollution from vessels, or navigational practices as are made applicable through the organization for "special areas". The coastal State is also permitted to adopt additional national measures, provided they are agreed to by the competent international organization (article 211(6)(c)).

511. The international rules and standards for the prevention, reduction and control of pollution from vessels, or the navigational practices for "special areas" which are referred to in article 211(6), are provided respectively in two IMO instruments: MARPOL 73/78 provides for the designation of large sea areas as Special Areas where strict discharge limits and equipment requirements are applicable; and SOLAS and the associated General Provisions on Ships' Routeing provide for the adoption of ship routeing measures, such as areas to be avoided. The IMO Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Sea Areas (IMO Assembly resolution A.720(17)) provide, *inter alia*, for the identification of an area as a particularly sensitive sea area if, because of the area's recognized ecological, socio-economic or scientific characteristics, the need for associated protective measures has been determined by IMO. A PSSA can be established within and beyond the limits of the territorial sea and include a buffer zone, i.e., an area contiguous to the site-specific feature (core area) for which special protection from shipping is sought.

512. In response to the decision of the IMO Marine Environment Protection Committee in 1998 to review the IMO Guidelines on the identification of PSSAs in order to provide simple and expeditious procedures and also to reassess them in relation to the relevant provisions of UNCLOS (see A/53/456, para. 326), MEPC at its forty-third session (June/July 1999) approved for adoption by the Assembly in November 1999 amendments to the IMO Guidelines (MEPC 43/21, annex 6) which: (a) provide for new procedures for the identification of PSSAs and the adoption of associated protective measures; and (b) insert the description of the Sabana-Camagüey Archipelago (identified as a PSSA in 1997) in appendix C of the Guidelines.

513. The Committee decided to continue its work on the revision of the Guidelines, including the new procedures, on the basis of a submission by IUCN, suggesting the simplification and separation of the Guidelines on the Designation of Special Areas from those relating to the Identification of PSSAs (MEPC 43/6/3); and a submission by the Division for Ocean Affairs and the Law of the Sea on the relationship between UNCLOS and the IMO Guidelines for the Designation of Special Areas and the Identification of PSSAs (MEPC 43/6/2). The Division's document, which was submitted in response to the Committee's decision to reassess the Guidelines in relation to UNCLOS, addresses issues emanating from UNCLOS which may need to be taken into account in the revision of the Guidelines in order to facilitate the harmonization of those Guidelines with the provisions of UNCLOS. The Committee decided to establish a Correspondence Group on the revision of resolution A.720(17) (see MEPC 43/21, paras. 6.17, 18.37-18.38 and annex 20).

514. In the meantime while the Committee is reviewing the Guidelines, it will proceed with the consideration of proposals for Special Areas and PSSAs and related routeing measures against the current criteria and procedures of resolution A.720(17), including the new procedures, once they are adopted.

515. Two proposals for the identification of a PSSA were submitted to the Committee at its forty-third session: one by Egypt, for the establishment of areas to be avoided and the identification of the waters in the vicinity of the Straits of Tiran as PSSAs (MEPC 43/6/1); and another by Colombia, for the identification of Malpelo island as a PSSA. The Colombian proposal notes that one of the main problems of the island and especially the surrounding waters concerns the permanent presence of fishing boats, both Colombian and foreign, which engage in illegal fishing (MEPC 43/6/7). The Committee decided to consider the proposals at its forty-fourth session, when it would have all the necessary information. It can be noted that the Colombian proposal represents another example of how IMO is increasingly being asked to devise measures to address the problem of illegal fishing (see also the subsection on flag State implementation, para. 182).

4. Climate change

516. Since last year's report, the Subsidiary Body for Implementation of the United Nations Framework Convention on Climate Change met twice, in November 1998 and May-June 1999, to address practical and technical questions about how best to advance the aims of that Convention and its Kyoto Protocol and to prepare for the fifth session of the Conference of the Parties, to be held at Bonn from 25 October to 5 November 1999. One of the possible effects of climate change is that melting glaciers and thermal expansion of sea water may raise sea levels, threatening low-lying coastal areas and small islands. Ocean ecosystems may also be affected. In addition to higher sea levels, climate change could reduce sea ice cover and alter ocean circulation patterns, vertical mixing of waters and wave patterns. This could have an impact on biological productivity, the availability of nutrients and the ecological structure and functions of marine ecosystems.

517. The Commission on Sustainable Development, acting as preparatory body for the special session of the General Assembly for the review and appraisal of the implementation

of the Programme of Action for the Sustainable Development of Small Island Developing States (see paras. 94-100), noted in the elements for a draft document of the General Assembly that small island developing States are among those countries most at risk from the adverse effects of climate change (see A/S-22/2, para. 28). During 1997-1998, the El Niño phenomenon had its strongest impact on record on the sustainable development of many small island developing States.

518. Identifying climate change as one of the sectoral areas requiring urgent action, the Commission noted that international support is particularly required for identifying adaptation options and linking efforts to reduce vulnerability with the best available information. It further emphasized that in the context of actions being undertaken, the international community and small island developing States should pursue, *inter alia*, improvement of the capacity of small island developing States to adequately respond and adapt to climate change, and improvement of capabilities for climate prediction (ibid.).

519. Climate-related activities of the International Oceanographic Commission have also continued to expand, including the co-sponsorship or hosting of several international conferences, symposia and seminars, such as the Ocean CO_2 Panel and the Second International Ocean CO_2 Symposium in Tsukuba, Japan, in January 1999; and the International Seminar on the 1997-1998 El Niño Event, held at Guayaquil, Ecuador, in November 1998. IOC and WMO are in the process of establishing a new Joint Commission for Oceanography and Marine Meteorology in response to the need to enhance integrated observation of the earth's atmosphere and oceans. (see para. 622)

520. A Theme Session on Global Change Aspects was to meet at Stockholm from 29 September to 2 October 1999, as part of the 1999 Annual Science Conference of the International Council for the Exploration of the Sea (ICES). Renewed focus on climate change research in ICES member countries was a consequence of the recent collapse of many North Atlantic fisheries and the concurrent occurrence of unusual environmental conditions. Before launching into the next phase of climate change monitoring, prediction and adaptation, it was essential to evaluate the knowledge about the characteristics of North Atlantic variability.

521. Also, a number of new reports, articles and scientific studies had appeared since the last report citing possible effects of climate change and global warming on the oceans. According to one report, which was disputed by some scientists, global warming may be causing a "continuous El Niño" that threatens the ecology of the world's oceans (report released by the World Wildlife Fund and the Marine Conservation Biology Institute). The report links rising ocean temperatures to the collapse of salmon and other marine wildlife. Evidence from another study indicates that some of the conditions accompanying global warming may promote the growth of algae in the Southern Ocean.

VIII. Underwater cultural heritage

522. The Executive Board of UNESCO at its one hundred forty-first session in 1993 adopted a resolution by which it invited the Director-General to prepare a feasibility study on the drafting of a new convention for the protection of the underwater cultural heritage which includes in its definition archaeological and historical objects referred to in articles 149 and 303 of UNCLOS. On the basis of the feasibility study (146 EX/27), the Executive Board decided that further study was needed, in particular with regard to jurisdictional aspects of the proposal and its possible implications, taking into account the provisions of UNCLOS on national jurisdiction. The Director-General recommended that a group of experts be convened to discuss all aspects of the proposal, with emphasis on jurisdictional matters. The experts, acting in their personal capacity, met in May 1996 and agreed that there was a need for a legally binding instrument for the protection of the underwater cultural heritage and that UNESCO was the appropriate forum for its adoption. They also concluded that the problem required urgent attention since technological advances currently permitted the recovery of objects of archaeological or historical value from almost any depth of the ocean.

523. The Executive Board then invited the Director-General to prepare a draft convention, to circulate the draft for comments and to convene a group of governmental experts, representing all regions, and representatives of competent international organizations to review the draft with the aim of submitting it to the General Conference of UNESCO at its thirtieth session in 1999. The group of experts met for the first time in Paris from 29 June to 2 July 1998 to examine the draft Convention on the Protection of Underwater Cultural Heritage (CLT-96/CONF.202/5 Rev) and then again in Paris from 19 to 24 April 1999 (the revised draft Convention is contained in document CLT-96/CONF.202/5 Rev.2; the report of the meeting is contained in document CLT-99/CONF.204).

524. Major differences at these meetings were expressed on the question of jurisdiction over underwater cultural heritage located in the exclusive economic zone or on the continental shelf of States (article 5 of the draft). A majority

of experts supported the jurisdiction of coastal States over underwater cultural heritage in the exclusive economic zone and on the continental shelf, as reflected in article 5 of the original draft, since in their view, it was not only in conformity with UNCLOS but also a development called for by UNCLOS in article 303, paragraphs 1 and 4. For other experts, jurisdiction for the protection of underwater cultural heritage outside the contiguous zone rested, in accordance with article 303 of UNCLOS, on the flag States of the vessels conducting the activities directed at underwater cultural heritage. Those experts referred in particular to General Assembly resolution 53/32 on "Oceans and the law of the sea", in which the Assembly stressed "the importance of ensuring that the instrument to be elaborated is in full conformity with the relevant provisions of the Convention". Although the interpretation of UNCLOS article 303 differed from one group to the other, both groups of experts agreed on the need not to undermine the jurisdictional regime established in the Convention.

525. Different views were also expressed on the question of sovereign immunity of sunken warships and other government vessels (article 2 of the original draft). Some experts expressed the view that the principle was not relevant in relation to underwater cultural heritage and could not be automatically applied in that context, and others were specifically opposed to sovereign immunity in the case of wrecks located in the internal waters and territorial seas of other States. On the other hand, another group of experts was of the view that the flag State of a wreck entitled to sovereign immunity should always retain exclusive jurisdiction over the wreck and its contents in all maritime areas.

526. In view of those differences, the group of governmental experts was unable to agree on a final draft convention to be submitted to the General Conference of UNESCO at its thirtieth session (26 October-11 November 1999), as originally envisaged. Nevertheless, the experts group meetings made substantial progress in particular in view of the fact that the different positions were clarified and incorporated in the draft for further discussion. In addition, all experts spoke in favour of the need to protect underwater cultural heritage and all but one, to adopt a convention for that purpose. The group of experts decided to report to the General Conference at its thirtieth session on the progress achieved and to invite the Director-General to take all appropriate measures for the continuation of the work of the governmental experts in the following biennial programme of UNESCO.

IX. Marine science and technology

A. Marine science

527. The importance of marine science for, *inter alia*, the development of marine resources protection and preservation of the marine environment and study of the global environment is well recognized. The Commission on Sustainable Development observed in its decision 7/1 that "scientific understanding of the marine environment, including marine living resources and the effects of pollution, is fundamental to sound decision-making. Among other aspects of the global environment, this applies to the interaction between atmospheric and oceanic systems such as experience with the 1997-1998 El Niño phenomenon" (para. 32). To give an idea about the range and diversity of scientific and technological advancements over the past year, a selective sample is provided below.[106]

Marine biology

528. It is estimated by researchers that there are about 50 "dead zones" — zones with little or no oxygen — in the world's coastal seas, created essentially by human activities. The largest dead zone in the western hemisphere is caused by pollution from the Mississippi flowing into the Gulf of Mexico. The area of Tokyo Bay with insufficient oxygen is growing in size. Sludge, disproportionate growth of oxygen-consuming phytoplanktons resulting from large amounts of phosphorus and nitrogen released into the coastal waters from land-based activities and destruction of tidelands and beaches by land reclamation projects are the probable causes of reduced oxygen levels. Many types of marine life cannot survive in the oxygen-poor environments.

529. Changing water temperature has important impacts on the composition of fish species in a given ocean area. For example, researchers believe that the average temperature of the Mediterranean has risen by one to two degrees in the past 30 years. As a result, growing numbers of tropical fish have been migrating to the Mediterranean from the Atlantic and the Pacific through the Strait of Gibraltar and the Suez Canal, respectively. Experts estimate that about 25 per cent of the marine life in the Mediterranean consist of recent immigrants and that there are now more than 100 species of tropical fish competing with the indigenous residents.

530. The deep ocean floor is one of the richest, but at the same time one of the least known, ecosystems in the planet. Before the number of species and their population can be determined with any degree of accuracy, new research is demonstrating that they may be starving to death, the hypothesized cause being an increase in sea surface

temperature. Most animals of the deep rely on a food chain that begins near the ocean's surface, characterized by an abundance of microscopic plants called phytoplanktons, which depend on sunlight for growth. These plants in turn nourish a whole chain of marine life. Leftovers from the chain, including dead plants and animals, as well as faecal droppings, produce a constant rain of organic matter that feeds the animals at the bottom. However, recent studies have shown that the rainfall of food in a given area of ocean declined over a period of seven years. This deficit in food supply, with unchanged demand as measured by the oxygen consumption of the marine creatures of the ocean floor, supports the starvation hypothesis.

531. ICRI reported that new research in marine biology using genetic markers is providing information on the natural flow of biodiversity throughout tropical oceans; this is now of critical importance as there may be a need to reintroduce corals and other fauna onto coral reefs that have been devastated by the massive coral bleaching and death that occurred in 1998. Similar research on the production of large quantities of larval fish species for food and aquariums should be enhanced to restock reefs depleted by overfishing, especially the use of cyanide for the live fish trade. This technique is also important in assessing the genetic interconnectivity between reefs and for an understanding of the genetic relations and dispersal of larvae between reefs. Further knowledge in this field is important in the conservation of coral reef communities and for ensuring that relevant "source" reefs can be protected and act as sources of larvae for downstream reefs.

532. ICRI also communicated that technologies for remote sensing, including satellite, space shuttle and aerial platform-based sensing, also used in association with GIS technologies, are emerging as useful tools for coral reef management and for assessment of coral reefs on a global scale.

533. Corals have a narrow range of temperature tolerance, and high water temperatures associated with events like the 1998 El Niño can leave corals vulnerable to disease, damage and death. Temperature, ultraviolet light exposure, turbidity and weather interact to cause coral bleaching. In early 1999, a joint United States-Australian data-gathering project was launched that would combine data on sea-surface temperature and computerized weather data with on-site data with a view to predicting "hot spots" that might be vulnerable to coral bleaching.

534. In marine biotechnology, an interesting twist occurred in the commercial development of a unique enzyme, with tolerance for high temperatures, pressures and alkalinity, from an extremophile, an organism living in an extreme environment — in this case, a hydrothermal vent. The specially engineered enzyme will be used in drill hole cleaning as an active ingredient in a fracture fluid. This means that enzymes from organisms that were brought from beneath the earth will be pumped right back into the earth.

535. It is estimated that hydrothermal vents in the relatively shallow waters of Tatum Bay of Papua New Guinea produce the highest concentrations of arsenic found in any marine setting. However, researchers have recently discovered that this does not adversely affect marine life in the small bay. They determined that the arsenic was controlled by dilution, and by incorporation into iron compounds that precipitate out of the seawater when the fluid from the vents mixes with the seawater. The findings, the researchers suggest, could help in developing new methods to treat arsenic contamination in other settings.

536. For the first time, researchers created a system designed to track occurrences of marine-related diseases as a whole rather than as isolated events, by using geographic information system (GIS) technology to combine information from numerous databases. The system documents marine illnesses and mortality events — including harmful algal blooms, massive fish kills and lesions, coral reef bleaching, sea turtle tumours, seagrass loss and mass marine mammal strandings and mortalities — occurring from 1972 to the present along the North-East Atlantic coast, in the Gulf of Mexico and in the Caribbean. Key findings show that harmful algal blooms are becoming more frequent and widespread, and human diseases associated with biological toxins from marine algae, bacteria and viruses are on the rise.[107]

Scientific instruments and equipment

537. The continuous interplay between wind and ocean eventually affects almost everything else on earth through its influence on weather and climate. The existing wind/sea data available from ships, aircraft and ocean buoys as well as, in part, from satellites, is of a very limited scope and coverage. To augment the database, a new ocean-observing satellite went into orbit in 1999 to begin at least two years of daily measurements, using a scatterometer (a radar device), of the speed and direction of the winds that stir the ocean surface. The data will have both short-term and long-term uses, including weather forecasting, early storm detection, predicting periodic widespread phenomena such as El Niño and La Niña, and identifying subtle changes in global climate. Experts also believe that combining the wind/sea data from this satellite with the data on ocean

height from another satellite will afford them a more complete picture of wind patterns and their effects on waves and currents.

538. Sound can be used to measure the temperatures of the world's oceans and detect long-term climate change, as was recently demonstrated by an eight nation experimental programme called Acoustic Thermometry of Ocean Climate (ATOC). ATOC is based on precise measurements of the speed of sound through oceans; the warmer the water, the faster sound travels. The advantage of the ATOC system over traditional arrays of thermometers on buoys and ships is that it takes an integrated measurement of temperature all along the path the sound travels, averaging the temperatures of water over thousands of miles. Systems reliant on spot temperatures fail to collect enough data from regions of the oceans sparsely covered by sensors of any kind. The experiment, however, aroused opposition from several environmental organizations on the grounds that the sounds generated by underwater loudspeakers used in the tests might adversely affect marine animals.

539. In 1998, a unique long-term unmanned observatory, dubbed NeMO (New Millennium Observatory), was set up at the summit of an underwater volcano. The observatory consists of a number of sampling, sensing and photographic instruments along with unmanned diving equipment. NeMO is intended to enhance scientists' understanding of the relationships between volcanic and hydrothermal vent activities and the microbial biosphere beneath the volcano's surface. Unique life forms known as thermophiles can live in water with a temperature of 360° Celsius. The microbes are apparently one of the ancient forms of life known on earth. In fact, many scientists now believe that life may have begun first at deep-sea hydrothermal vents.

540. A bonanza for marine science came from an interesting source: rapid progress in underwater communication technology using fibre-optic cables made the old underwater telephone cables obsolete; making use of thousands of miles of these discarded telephone cables, scientists have begun to create an underwater network of seismic laboratories. The old cables serve as deep-sea extension cords running from land-based power stations to seismometers and other geological sensors attached to them. In 1998, the world's first deep undersea seismic observatory, using discarded telephone cables, capable of continuous long-term functioning, went into operation. Ecologists and other scientists intend to collect data about earthquakes, underground nuclear explosions, changes in the earth's internal structure and its magnetic field, and even whale migration patterns.

541. For the last 16 years, ocean drilling for research purposes has been carried out by the vessel *Joides Resolution*, and the Ocean Drilling Program (ODP), a 22-nation scientific consortium that operates it. ODP's lease on *Joides Resolution* ends in 2003, at which time a replacement is needed. The vessel, which does not have a riser, has certain limitations: it cannot operate in unstable sediments, it does not have a safeguard against blowouts when its bit penetrates oil or gas deposits and its maximum hole depth is limited to 2.1 kilometres under the seafloor. A drillship with a riser can overcome these limitations. Japan is planning to complete construction of such a research drillship by 2003. While this ship is expected to be a welcome feature for the ocean drilling community, the community is also interested in having a replacement for the *Joides Resolution* as well, a riserless ship which can be used for purposes that do not require the specialized capabilities of a riser ship, e.g., for their research on climate and past ocean circulation, collecting large amounts of shallow sediment cores, etc. The community is convinced of the need for two research drillships, one with a riser and the other without. The debate in the 22-nation consortium during the past year, however, focused on obtaining funding for the second ship and also the funds to operate the two-ship programme.

Programmes on marine science in the United Nations system

542. With respect to oceanographic data, the Commission on Sustainable Development stressed the value both of the collection of reliable oceanographic data through such systems as the Global Ocean Observing System, including the Global Coral Reef Monitoring Network, and of periodic comprehensive scientific assessment of international waters, such as the Global International Waters Assessment, including assessments of the impact of physical and chemical changes on the health, distribution and productivity of living marine resources(Commission on Sustainable Development decision 7/1, para. 32 (c)).

543. Strengthening marine science capabilities in developing countries is a continuing need. In this context, the Commission on Sustainable Development invited the International Oceanographic Commission (IOC) of UNESCO to consider how the support available for building scientific capacities needed for interdisciplinary, sustainable and effective management of the marine environment in developing countries, particularly in the least developed countries and small island developing States, could be extended and focused more effectively (ibid., para. 32 (b)).

544. *International Oceanographic Commission.* UNESCO/IOC, the competent international organization with regard to Part XIII of UNCLOS on marine scientific research, reported on developments in this field. The IOC Assembly, at its twentieth session (Paris, 29 June-9 July 1999), held important discussions on IOC's role vis-à-vis other international organizations and conventions, including UNCLOS. It was concluded that IOC should play a more assertive role in marine affairs in general and scientific research in particular, in line with the emphasis given by the Commission on Sustainable Development, in its decision 7/1, on the scientific understanding of the marine environment.(The Division for Ocean Affairs and the Law of the Sea participated in the session.) This new context necessarily called for adjustments in the mandate and programmes of IOC. The proposed new statutes of IOC[108] state that the purpose of the Commission is to: "promote international cooperation and to coordinate programmes in research" and that the Commission will "collaborate with international organizations concerned with the work of the Commission, and specially with [the] organizations of the United Nations system" (article 2).[109] In that regard, specific references were made to exploring new partnerships, for example, with the industry and the military, in relation to data and information exchange. The new proposed statutes also make the necessary adjustments to the IOC Constitution to reflect its new functions as entrusted to it by UNCLOS. In this regard, IOC's functions shall be, *inter alia*, to "respond, as a competent international organization, to the requirements deriving from the United Nations Convention on the Law of the Sea (UNCLOS), the United Nations Conference on Environment and Development (UNCED) and other international instruments relevant to marine scientific research, related services and capacity-building" (article 3).

545. In its discussions on the relationship between IOC and UNCLOS, the Assembly stressed the importance of UNCLOS, which has conferred a "new youth" upon IOC. It exhorted IOC to initiate close cooperation with the Division of Ocean Affairs and the Law of the Sea of the United Nations Secretariat and it reaffirmed that fulfilling IOC's role in the implementation of UNCLOS was "a first priority".

546. In this connection, it was decided to provide an impetus to the Advisory Body of Experts on the Law of the Sea (ABE-LOS) by reissuing a call for nominations to IOC member States.[110] The first formal meeting of ABE-LOS is to be organized early in 2000. ABE-LOS, a non-permanent body, was established "to provide advice, upon request, to the IOC Governing Bodies and the Executive Secretary on the possible implementation of the proposals and recommendations on IOC's role and responsibilities under UNCLOS". The Assembly endorsed the work programme of ABE-LOS as contained in document IOC/INF-1114. Issues to be examined include: implementation of article 247 of UNCLOS, transfer of technology (Part XIV of UNCLOS), nature and implications of marine scientific research (including analysis of State practice) and possible endorsement by the Meeting of States Parties to UNCLOS of documents approved by IOC governing bodies, etc.

547. IOC has also undertaken other activities as specified in or deriving from UNCLOS. In accordance with article 2 (2) of Annex VIII of UNCLOS, IOC prepared a list of experts in marine scientific research for use in special arbitration (see also para. 71). In addition, IOC/IHO have volunteered to prepare a book entitled "Continental Shelf Limits: the Scientific And Legal Interface" to be published later in 1999, which will serve as a tool for capacity-building in developing countries wishing to plan continental shelf and exclusive economic zone surveys. It was also considered that *Marine scientific research: a guide to the implementation of the relevant provisions of the United Nations Convention on the Law of the Sea*[111] was worth revisiting in this context with a view to its possible revision. IOC expressed its willingness to assist States wishing to submit claims to the Commission on the Continental Shelf by providing, as guidance only, and upon request, its own available survey maps. These maps would also be useful in the laying of cables and pipelines as permitted under UNCLOS (articles 58 and 79).

548. The Assembly also encouraged the IOC secretariat to establish relations with the International Seabed Authority and the International Tribunal for the Law of the Sea for possible cooperation in such areas as seabed surveys.

549. Under article 244 of UNCLOS States and competent international organizations are requested to make available information as well as knowledge resulting from marine scientific research. For this purpose, States and international organizations are called upon to cooperate in promoting the flow of scientific data and information and the transfer of knowledge resulting from such research. The IOC Committee on International Oceanographic Data and Information Exchange (IODE) fulfills the role of facilitating the management and exchange of such data. Its function is to improve the knowledge and understanding of marine resources and the marine environment by providing a mechanism for the management and exchange of data and information from which this knowledge can be generated. In view of the tremendous amount of data available and the issues of confidentiality regarding access to data and in order

to ensure adequate access to data and information, particularly for developing States, it was considered that it might be useful to establish a new policy in this regard.

550. With regard to the IOC programmes such as the Global Ocean Observing System (GOOS) and other global observation sub-systems supported by IOC such as the Tropical Atmosphere Ocean (TAO) Array and the Pilot Research Moored Array in the Tropical Atlantic (PIRATA), attention was drawn to the reported incidents of vandalism of oceanographic equipment. Vandalism by vessels targets in particular the moored devices for real-time observation on which GOOS is highly dependent. Recognizing the gravity of such a problem, the IOC Executive Council at its thirty-first session approved resolution EC-XXXI.4 calling for action on this issue at the level of the United Nations system. It is envisaged that further legal action to prevent this major threat to the maintenance of those arrays or moored buoys will be considered through the development of a legal basis of such action, bearing in mind the existing legal instruments such as UNCLOS. A legal instrument would also help in addressing other issues linked to the use of new technologies by programmes such as ARGO (Array for Real-Time Geostrophic Oceanography).[112] It would help avoid the financial burden imposed upon participating countries as a result of vandalized equipment.

B. Marine technology

551. A new heavy-lift vessel concept aimed primarily at the platform removal market has been developed by a Norwegian firm. Tension-leg mooring techniques are used to ensure the safe transfer of the load onto the deck of the vessel at sea. The procedure also affords extensive experience in heavy-lift marine operations, including with the heaviest load ever transported by barges (the deck of an offshore production platform, weighing 52,000 tons, to be mated with its concrete gravity base).

552. Self-propelled, self-elevating barges, commonly known as liftboats, have been performing services at the well site (wireline, logging, coiled tubing, etc.) for the offshore oil and gas industry since the 1970s. Technological advancements have recently brought forth a new generation of self-propelled, self-elevating barges called OASES (offshore all-purpose self-elevating service) vessels, of considerably larger size and longer length, capable of performing a much wider range of services, from well workover and specialized drilling to construction, pipe laying, heavy lifts and platform removal. The market for OASES vessels is growing because they are more economical, have larger capacity, can perform a wider variety of tasks, also in deeper water, and are safer.

553. Installation of the world's deepest submarine pipeline is scheduled to begin in late 1999. A gas line about 400 kilometres in length, with 24-inch-diameter pipes, is to be laid across the Black Sea; much of the line is in water depths beyond 2,000 metres.

554. According to some estimates, submarine telecommunications together with the associated submarine fibre-optics cable industry is the largest marine industry in terms of value added. The extraordinarily rapid pace of development of the industry is driven by technological advances, not only in telecommunications technology but also in deepwater cable-laying technology (see also A/53/456, paras. 452 and 455). For example, in its planning stage, the world's largest global network, known as Project Oxygen, which will connect 265 landing points in 171 countries, was expected to have a carrying capacity of 100 billion bits of data per second. As the Project progressed, in early 1999 the projected capacity increased to 1,280 billion bits (1.28 terabits) per second. The capacity is now projected to be doubled to 2,560 billion bits (2.56 terabits) per second, as a result of technology allowing the construction of transoceanic cables containing up to eight fibre-optic pairs, as opposed to four pairs in conventional cables. Phase I of Project Oxygen is currently scheduled to be completed in mid-2003.[113]

555. Tremendous strides have been made in the cable-laying industry since the first transatlantic telegraph cable was laid 130 years ago. Aside from significant changes in vessel design itself, the segments of cable-ship operations that have changed the most are navigation and cable-working equipment. Perhaps the greatest improvement in the latter has been the use of cable plows and remotely operated vehicles (ROVs); these have allowed inspection, burial, de-burial, cutting and recovery of cables at ever-increasing water depths.

556. It has been reported that the United States is planning to build the largest floating structure ever envisioned: over a mile long, 500 feet wide and 250 feet high. The self-propelled structure, operating on the high seas, would provide logistical support for troop deployments, command and control operations, and humanitarian efforts such as disaster relief and evacuation. The structure would include a runway long enough to land fully loaded cargo planes, 85 acres of storage space for up to 150 aircraft, 5,000 cargo containers and 3,500 vehicles, as well as interior quarters for up to 20,000 troops.

557. The project is currently at the feasibility stage. Because such a large and complex structure has never been previously attempted, engineers are using computer simulation to determine how it will operate in various sea states. Computer simulation became necessary because it was impractical to build a physical model of such an enormous structure, testing it on the open sea would be dangerous and wave-tank scale models could not be sufficiently accurate. Given the structure's primary mission of logistical supply, operations of its cargo systems are critical. In 1998, computer simulations verified that the structure would be able to transfer cargo to and from adjacent supply ships in sea states 4 and 5 (wave heights of 6 and 9 feet respectively).[114]

558. In last year's report (A/53/456, para. 459), mention was made of an innovative use of ocean space: the world's first floating platform for launching spacecraft. The platform is moored near the equator, where gravity is much lower than at the location of the cosmodromes, which is expected to cut costs of launching spacecraft significantly and allow more useful cargo to be put into orbit. In March 1999, the first demonstration launch from the floating platform was carried out successfully when a simulation space vehicle was put into orbit. There had been concern during the engineering phase of the semi-submersible platform that the rocket launch might cause some damage. Assessments after the launch showed only very minor damage, such as a few broken light bulbs. The first commercial satellite launch from the platform was scheduled for September 1999.[115]

559. July 1998 saw the opening of a new Arctic shipping route: a Russian nuclear icebreaker successfully completed an experimental voyage at a considerable distance from the Siberian coast, through the ice of the central Arctic basin, conducting two cargo ships en route from Japan to a port in western Siberia. This Arctic route saves considerable time and fuel, as it is much shorter than the normal routes for conducting ships, which run nearer the coast. It is felt that the establishment of viable high-latitude routes through the Arctic Ocean may serve as a basis for regular transit routes between European ports and the countries of the Pacific basin.

560. Joint studies for a project for a permanent Europe/Africa link through the Strait of Gibraltar have been carried out since 1982 by the Governments of Morocco and Spain following a bilateral agreement on the subject. Feasibility studies are currently being conducted in stages following the completion of pre-feasibility studies in 1990. The first stage feasibility studies led to the selection for further study of a basic option for project implementation: a rail tunnel buried beneath the sill of the strait. The results of the deep drilling survey in 1997 in the second stage represented a turning point in the project. Contrary to expectations based on previous studies, the unexpected geological problems were revealed regarding the thickness of the sediments in the subsoil of the strait: in places, this proved to exceed 100 metres, much more than the 25 metres previously anticipated. This led to a new third phase of the feasibility studies focusing on further investigation, initiated in 1998. The results of this new stage will be decisive in improving geological knowledge of the undersea terrains and thus for the conduct of further project feasibility studies, if necessary.[116]

Acquisition of marine technologies

561. The development of environmentally sound marine technologies and of strategies for developing countries and countries with economies in transition for the acquisition of such technologies continues to constitute a primary concern of the international community (see also A/53/456, para. 329). In this context, the Commission on Sustainable Development recommended that one of the areas where "particular priority" is to be given is encouraging, at the national, regional and global levels, the steps necessary for an effective and coordinated implementation of the provisions of UNCLOS and Agenda 21, including institutional adjustments and improved coordination mechanisms for chapter 17 of Agenda 21, to support action at the national and regional levels in developing countries and those with economies in transition and the provision of, *inter alia*, financial and technical assistance for the transfer of appropriate environmentally sound technologies. In this context, the Commission indicated that the international community should promote, facilitate and finance, as appropriate, access to and transfer of environmentally sound technologies and the corresponding know-how, in particular to developing countries, on favourable terms, including concessional and preferential terms, as mutually agreed, taking into account the need to protect the intellectual property rights as well as the special needs of developing countries for the implementation of Agenda 21 (CSD decision 7/1, para. 3 (d)).

X. Settlement of disputes

562. Part XV, section 1, of the United Nations Convention on the Law of the Sea requires States parties to settle their disputes concerning the interpretation or application of UNCLOS by peaceful means in accordance with Article 2, paragraph 3, of the Charter of the United Nations. However,

when States parties to UNCLOS involved in a dispute have not reached a settlement by peaceful means of their own choice, those States parties are obliged to resort to the compulsory dispute settlement procedures provided for under UNCLOS (Part XV, sect. 2).

563. During the period under review, significant developments have taken place in the area of dispute settlement. Both the International Court of Justice and the International Tribunal for the Law of the Sea were seized of several disputes relating to the law of the sea. (Further details on the cases before the Tribunal and the Court may be found at the Web site of the Division for Ocean Affairs and the Law of the Sea: www.un.org/Depts/los.)

Cases before the International Court of Justice[117]

564. *Fisheries Jurisdiction (Spain v. Canada).* On 4 December 1998, ICJ declared that it had no jurisdiction to deal with the dispute brought by Spain against Canada concerning *Fisheries Jurisdiction.* The Court concluded that the dispute between Spain and Canada was covered by the terms of the reservation Canada had made to its declaration accepting the jurisdiction of the ICJ as compulsory and that consequently the Court was not competent to adjudicate upon the dispute.

565. In 1995, a Canadian patrol boat had boarded on the high seas a Spanish fishing boat, the *Estai*, in keeping with the Canadian Coastal Fisheries Protection Act and its implementing regulations. Relying on the declarations of both States accepting the jurisdiction of ICJ as compulsory, Spain contended that Canada had violated such principles of international law as the freedom of navigation and of fishing on the high seas as well as the right of exclusive jurisdiction of the flag State over its ships on the high seas. On the other hand, Canada maintained that ICJ lacked jurisdiction on account of the reservation it had made in its declaration of 10 May 1994 accepting the jurisdiction of the Court as compulsory in accordance with Article 36, paragraph 2, of the ICJ Statute. That reservation excluded from the jurisdiction of the Court all "disputes arising out of or concerning conservation and management measures taken by Canada with respect to vessels fishing in the NAFO Regulatory Area, as defined in the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, 1978, and the enforcement of such measures".

566. *Maritime Delimitation and Territorial Questions between Qatar and Bahrain (Qatar v. Bahrain).* On 18 February 1999, the Court placed on record Qatar's decision to disregard the 81 documents it had produced as annexes to its Memorial and the authenticity of which had been challenged by Bahrain. By an Order dated 17 February 1999, the Court decided that the Replies yet to be filed by Qatar and Bahrain would not rely on those documents. In addition, the Court granted a two-month extension of the time limit for the submission of the Replies, which were filed by the appointed date of 30 May 1999.

567. *Oil Platforms (Islamic Republic of Iran v. United States of America).* At the request of the Islamic Republic of Iran, the Court issued an Order dated 8 December 1998 extending to 10 March 1999 the time limit for the filing of its Reply and, consequently, extended to 23 November 2000 the time limit for the filing of the Rejoinder by the United States of America. The Islamic Republic of Iran filed its Reply with ICJ by the appointed date.

568. *Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria).* By an Order dated 30 June 1998, the Court fixed 31 March 1999 as the time limit for the filing of the Counter-Memorial by Nigeria. Subsequently, by an Order dated 3 March 1999, the Court extended the time limit for the filing of Nigeria's Counter-Memorial to 31 May 1999. Nigeria filed with ICJ its Counter-Memorial containing counter-claims by the appointed date. Cameroon did not challenge Nigeria's right to submit counter-claims.

569. Nigeria alleged in its counter-claims that Cameroon was internationally responsible for incursions along the border into Nigerian territory and as such was liable for damages. By an Order dated 30 June 1999, the Court ruled the counter-claims submitted by Nigeria to be admissible and thus would be examined during the proceedings on the merits of the case. In addition, ICJ, after a meeting between the Agents of the parties and the President of the Court held on 28 June 1999, decided that the parties should submit further written pleadings on the merits of their respective claims: Cameroon is to file a Reply by 4 April 2000 and Nigeria a Rejoinder by 4 January 2001.

570. On 30 June 1999, stating that it wished to inform the Court of its legal rights and interests so that they would not be adversely affected by the Court's decision on the maritime boundary between Cameroon and Nigeria and to protect its legal rights in the Gulf of Guinea, Equatorial Guinea filed an Application with the Court for permission to intervene in the case. However, Equatorial Guinea made it clear in its Application that it did not seek to become a party to the case since it preferred to delimit its maritime boundaries with its neighbours by negotiations.

Consequently, the Court fixed 16 August 1999 as the time limit for the filing of written observations by Cameroon and Nigeria on the Application submitted by Equatorial Guinea.

571. *Sovereignty over Pulau Ligitan and Pulau Sipadan (Indonesia/Malaysia).* On 2 November 1998, Indonesia and Malaysia jointly seized the Court of a dispute concerning sovereignty over Pulau Ligitan and Pulau Sipadan, two islands in the Celebes Sea.

572. The parties notified ICJ of a Special Agreement they had concluded at Kuala Lumpur on 31 May 1997 which had entered into force on 14 May 1998. On the basis of that Special Agreement, the parties requested the Court to determine which of the two States had sovereignty over the islands. The parties also expressed the wish to settle their dispute in the spirit of the friendly relations existing between them in keeping with the 1976 Treaty of Amity and Cooperation in South-East Asia.

573. Taking into account the wishes of the parties, as expressed in their Special Agreement, the Court, by an Order dated 10 November 1998, decided that the parties would file their respective Memorial by 2 November 1999 and Counter-Memorial by 2 March 2000. By an Order dated 14 September 1999, ICJ granted the request of the parties for a four-month extension of the time limit of the filing of their Counter-Memorials to 2 July 2000.

Cases before the International Tribunal for the Law of the Sea

574. *Case between Saint Vincent and the Grenadines and Guinea concerning the M/V Saiga.* One of the most significant developments during the past year was the settlement of the first dispute brought to the newly established International Tribunal for the Law of the Sea (see also para. 41).

575. The dispute raised many important issues falling under UNCLOS, such as the freedom of navigation and other internationally lawful uses of the seas, the enforcement of customs laws, refuelling (bunkering) vessels at sea and the right of hot pursuit.

576. The Tribunal was seized of the dispute between Saint Vincent and the Grenadines and Guinea concerning the arrest and detention off the coast of Sierra Leone by Guinean authorities of the oil tanker M/V Saiga, including its crew, flying the flag of Saint Vincent and the Grenadines. The Tribunal was requested by the parties, on the basis of their agreement, to deal with all aspects of their dispute, including damages, costs and objections to admissibility.

577. As regards admissibility, Guinea objected to admissibility on four grounds: (a) non-valid registration of the *Saiga*; (b) lack of a genuine link between the *Saiga* and Saint Vincent and the Grenadines; (c) non-exhaustion of local remedies; and (d) that Saint Vincent and the Grenadines was not entitled to present certain claims for damages in respect of natural and juridical persons who did not possess its nationality. However, Saint Vincent and the Grenadines challenged the objections to admissibility and the Tribunal rejected all the objections to admissibility advanced by Guinea.

578. In its decision rendered on 1 July 1999, the Tribunal found that by applying its customs laws to a customs radius, which included parts of the exclusive economic zone, Guinea had acted in a manner contrary to UNCLOS and that therefore the arrest and detention of the *Saiga* and its crew, the prosecution and conviction of its Master, the confiscation of the cargo and the seizure of the ship were unlawful. The Tribunal noted that each of the conditions for the exercise of the right of hot pursuit under article 111 of UNCLOS had to be satisfied for the pursuit to be legitimate. Therefore, the Tribunal found that there was no legal basis for the exercise of the right of hot pursuit by Guinea inasmuch as the alleged hot pursuit had been interrupted and that no laws or regulations of Guinea applicable in accordance with UNCLOS had been violated by the *Saiga*. In addition, the Tribunal noted that there was no excuse for Guinean officers to have fired at the ship with live ammunition, causing considerable damage to the ship and to vital equipment in the engine and radio rooms as well injuries to two persons on board. Accordingly, the Tribunal found that Guinea had used excessive force and endangered human life before and after boarding the *Saiga*, and had thereby violated the rights of Saint Vincent and the Grenadines under international law.

579. The Tribunal nonetheless rejected the claim by Saint Vincent and the Grenadines that Guinea had violated its rights by citing Saint Vincent and the Grenadines as "civilly liable" in the schedule of summons issued in connection with the criminal proceedings against the Master of the *Saiga* before the Tribunal of First Instance of Conakry, Guinea. As regards the release of the *Saiga* and its crew after the posting of the bond, the Tribunal, noting that a number of factors had contributed to the delay in releasing the ship and that not all of them were the fault of Guinea, rejected the claim by Saint Vincent and the Grenadines that Guinea had violated its rights by failing to release the *Saiga* and its crew promptly after the posting of the bond.

580. Lastly, the Tribunal awarded compensation for the damage and loss suffered by the shipowner, the charterer, the cargo owner, the Master and members of the crew and

other persons on board the ship in the total amount of US$ 2,123,357 and decided that each party should bear its own legal and other costs.

581. *Cases between Australia and New Zealand on the one side and Japan on the other concerning Southern Bluefin Tuna.* In accordance with article 290, paragraph 5, of UNCLOS, on 30 July 1999, Australia and New Zealand filed with the Registrar of the International Tribunal for the Law of the Sea a request for the prescription of provisional measures (interim injunction) in a dispute against Japan regarding the conservation of the population of southern bluefin tuna. Southern bluefin tuna is a highly migratory fish species (see Annex I to UNCLOS) that traverses the territorial sea and the exclusive economic zone of several countries and the high seas (see also paras. 42-45).

582. The applicants alleged that Japan had carried out a unilateral experimental fishing programme for southern bluefin tuna in 1998 and 1999 which posed a threat to the stock since the population was significantly overfished and risked being depleted. The applicants also contended that Japan had failed to take, and to cooperate in taking, required measures for the conservation and management of the southern bluefin tuna stock, thus placing itself in breach of its obligations under international law, specifically articles 64 and 116 to 119 of UNCLOS. Moreover, it was claimed that Japan's experimental fishing programme contravened the allowable catch set for Japan under the 1993 Convention for the Conservation of Southern Bluefin Tuna. That Convention, which is a trilateral agreement entered into by Australia, Japan and New Zealand, established a global total allowable catch for southern bluefin tuna as well as national allocations. Efforts by the parties to resolve their dispute through negotiations, mediation as well as arbitration within the ambit of the 1993 Convention were unsuccessful. Accordingly, the applicants requested the Tribunal to grant an interim injunction against Japan which would compel it to cease its unilateral experimental fishing programme pending the constitution of an arbitral tribunal to which the applicants had submitted their dispute pursuant to Part XV, section 2, of UNCLOS.

583. On 9 August, Japan filed with the Tribunal its Response to the Requests by Australia and New Zealand for provisional measures. In its Response, Japan argued that an UNCLOS Annex VII arbitral tribunal would not have prima facie jurisdiction and that therefore the Tribunal did not have jurisdiction to prescribe provisional measures. Japan also made a counter-request to the Tribunal to grant it provisional relief by prescribing that Australia and New Zealand urgently and in good faith recommence negotiations with Japan.

584. On 27 August, the Tribunal issued an Order by which it found that it had jurisdiction over the dispute. And, while noting that scientific uncertainty existed regarding measures to be taken to conserve the southern bluefin tuna stock, the Tribunal prescribed the following provisional measures: (a) that the parties should take no further action that would aggravate or extend the dispute; (b) that the parties should take no further action that would prejudice compliance with any decision on the merits that the arbitral tribunal to be constituted in accordance with Annex VII of UNCLOS might render; (c) that the parties should keep their annual catches of southern bluefin tuna from exceeding the levels of annual allocations, as last agreed upon by the parties; in addition, without prejudice to any decision that the arbitral tribunal might render, that in calculating the 1999 and 2000 annual catches account should be taken of the 1999 catch as part of the experimental fishing programme; (d) that all three parties should refrain from conducting an experimental fishing programme, unless the other parties agreed otherwise or the experimental catch was counted against the annual allocation concerned; (e) that the parties should resume negotiations in order to reach agreement on measures for the conservation and management of southern bluefin tuna; and (f) that the parties should seek agreement with other States and fishing entities engaged in fishing for southern bluefin tuna for the purpose of ensuring conservation and promoting the aim of optimum utilization of the stock.

585. The parties are to submit an initial report to the Tribunal by 6 October on the steps they have taken or propose to take in compliance with the prescribed provisional measures. After that date, the President of the Tribunal is authorized to request from the parties any additional reports or information considered appropriate. Furthermore, the Tribunal decided that the Registrar should transmit the Order to all States parties to UNCLOS involved in the fishery for southern bluefin tuna.

586. Lastly, it should be noted that the arbitral award in the case concerning maritime delimitation between Eritrea and Yemen has yet to be rendered (see also A/53/456, para. 164).

XI. Capacity-building and information dissemination

587. In the field of ocean affairs, apart from formulating international conventions, rules and standards, programmes and plans of action at the global, regional and interregional levels, the organizations of the United Nations system have been particularly effective in two other areas: capacity-building and information dissemination. Capacities of human

resources and institutions are strengthened primarily through fellowship and training activities. Information, especially of global scope, is provided through a wide variety of means, ranging from Web sites, databases, publications and reports to responses to ad hoc requests.

A. Capacity-building

1. Fellowships

588. In the field of oceans and the law of the sea, the Hamilton Shirley Amerasinghe Memorial Fellowship Programme, which is prized for the academic opportunity and the practical experience it provides for the fellows, continues to attract a high degree of interest from candidates from all regions as well as among academic institutions. Applications continue to be received from academic institutions to be added to the list of the participating universities and institutes. Most recently, interest has been shown by the Centre for Maritime Policy, University of Wollongong, Australia. There are currently 16 universities and institutions participating in the fellowship programme (see A/53/456, para. 480).

589. Over 100 applications are received from candidates worldwide. Owing to the high calibre of candidates applying for the fellowship each year, the Fellowship Advisory Panel, which evaluates the candidates, last year once again requested the Under-Secretary-General, the Legal Counsel of the United Nations, to continue to explore the possibility of increasing the endowment to enable the Panel to award more than one fellowship per year.

590. The General Assembly has repeatedly urged Member States, interested organizations, foundations and individuals to contribute voluntarily towards the financing of the fellowship to enable a greater number of candidates to benefit from it.

591. The United Kingdom has again this year made a special contribution to fund an additional fellowship at a United Kingdom participating university in 2000. (In the past, special contributions of the United Kingdom have financed two fellowships: one for the 1995/96 school year, the other for the 1996/97 school year. See A/50/713, para. 248, and A/51/645, para. 303.) The Government of Germany is also funding a fellow from Papua New Guinea to study at the Max Planck Institute in Heidelberg, Germany, starting September 1999. In addition, the sum of $925 was received from the Government of Cyprus for the fellowship trust fund. The Advisory Panel welcomed such contributions and expressed the hope that other countries might follow these examples. It was possible to award one fellowship from the trust fund, a candidate from Nigeria who would be undertaking research at the School of Law, Dalhousie University, Halifax, Canada.

592. The fellowship has been awarded annually for each of the last 13 years. Previous fellows have come from the following countries: Nepal (1986), United Republic of Tanzania (1987), Chile (1988), Trinidad and Tobago (1989), Sao Tome and Principe (1990), Croatia (1991), Thailand (1992), Kenya (1993), Seychelles and Cameroon (1994), Tonga (1995), Indonesia (1996), Samoa (1997), and Nigeria and Papua New Guinea (1998).

593. The fellowship programme is administered by the Division for Ocean Affairs and the Law of the Sea within the framework of the United Nations Programme of Assistance in the Teaching, Study, Dissemination and Wider Appreciation of International Law. It is intended primarily for expert nationals who are involved in ocean law or maritime affairs or related disciplines, either in government agencies and bodies or in educational institutions. Its aim is to assist such individuals or candidates in acquiring additional knowledge in ocean affairs and the law of the sea. The fellowship was established in 1981, in memory of the late Hamilton Shirley Amerasinghe, the first President of the Third United Nations Conference on the Law of the Sea, in recognition of his contribution to the development of the law of the sea.

594. UNU reported that, in order to meet the growing need of developing countries in fisheries-related skills, the Fisheries Training Programme was established in 1998 at the Marine Research Institute in Reykjavik following on the signing of an agreement of cooperation for its establishment by UNU, the Government of Iceland and the Marine Research Institute of Iceland. The programme is intended to strengthen the capabilities of Governments, universities and research and training institutions of developing countries in the area of fisheries. Under the programme, a six-month training course at the postgraduate level is organized annually with the financial support of the Government of Iceland. The annual course is a blend of theoretical and practical training for immediate application in participants' home countries and is composed of a core curriculum of 6 weeks, a specialized training of 12 weeks and a field training of 6 weeks. The first course was organized from August 1998 to February 1999, for which six fellowships were awarded to trainees from three countries of sub-Saharan Africa. The second course began in June 1999, with nine participants from Central and South America, Asia and

Africa. (Detailed information on the programme is available from the programme's Web site: http://www.unu.edu/iceland/fisheries/fisheries.html.)

2. TRAIN-SEA-COAST programme

595. The training activities in the field of ocean affairs and the law of the sea are carried out under the Division's TRAIN-SEA-COAST (TSC) programme (for details of the programme, see A/53/456, paras. 482-486; or consult the Web site of the Division at http://www.un.org/Depts/los/TSC). The programme has been designed to build up an in-country capacity to improve skills in integrated ocean and coastal management among policy makers and practitioners in developed as well as developing countries. The main objectives of the TSC programme are to strengthen the capabilities of local institutions (called course development units (CDUs)) to provide training and to do so within the framework of a network of participating institutions worldwide which share courses, course material and personnel. The programme, which initially established a network of 11 CDUs in 10 countries with the assistance of UNDP and became operational in 1995, entered a new phase in 1998 when it became linked with the UNDP/GEF programme entitled "Strengthening Capacity for Global Knowledge-Sharing in International Waters".

596. Activities under the TSC programme during the past year focused mainly on four tasks: (a) establishment and operation of the five new CDUs associated with the UNDP/GEF International Waters projects and provision of continuous support to the existing CDUs; (b) maintaining effective coordination between the Division's TSC Central Support Unit at Headquarters, the CDUs and the GEF project coordinators; (c) enhancing collaboration among the TSC programme and the sister programmes of the United Nations-TRAIN-X Network (see paras. 599 and 600) as well as with other United Nations organizations involved in training and in integrated coastal management; and (d) development of public information activities concerning the TSC programme.

597. Following the completion of the Course Developers Workshop and Planning Meeting held at United Nations Headquarters from 17 to 28 August 1998, course developers and CDU managers associated with the UNDP/GEF project undertook the task of establishing CDUs within the framework of their respective host institutions (universities and NGOs). It is expected that by early 2000, all new CDUs will be fully established. The new CDUs started the preparation of courses under the pedagogic support of the TSC Central Support Unit, while previously established CDUs continued with their course development and delivery activities. In the case of TSC/Philippines and TSC/Brazil, which had undertaken several deliveries of their courses, they are also in the process of undertaking post-training evaluations, the results of which are of importance not only to their respective CDUs but also for the TSC programme as a whole.

598. The TSC Central Support Unit has played an important role in promoting coordination among the CDUs and the GEF project coordinators. This has involved the maintenance of a constant flow of communication with and among the CDUs and the GEF project coordinators. The keen interest of GEF in the TSC CDUs was translated into the form of assistance in: (a) identification of international, regional or local subject-matter experts who are assisting in the development of courses; (b) participation of a CDU manager at a regional workshop organized by the GEF project; and (c) funding of travel within the region of CDU personnel. On the basis of the above, the TSC Central Support Unit has assisted in the creation of a very positive working environment among all key players.

599. The TRAIN-SEA-COAST programme was developed following the United Nations system-wide TRAIN-X model, the general approach of which is to establish a network of training centres within developing as well as developed countries that have agreed to adopt a common standard for training development and to share training courses, training material and personnel. A central support team with the agency concerned with the subject area acts as the central node of links among the network of national/regional centres and carries out the overall network coordination functions. In addition to promoting cooperation between developed and developing country institutions, the TRAIN-X model assists local institutions in developing their own solutions to local problems, reduces the costs of developing and delivering training programmes through economies of scale and eliminates duplication of effort in course development. The TRAIN-X Network is composed of, in addition to TRAIN-SEA-COAST, CODEVTEL in telecommunications (central support unit at the International Telecommunication Union (ITU)); TRAINMAR in maritime services (UNCTAD); TRAINAIR in civil aviation (ICAO); TRAIN-FOR-TRADE in international trade (UNCTAD); TRAINPOST in postal services (Universal Postal Union (UPU)) and CC:TRAIN in climate change (United Nations Institute for Training and Research (UNITAR)).

600. The TSC programme chaired the TRAIN-X Network from September 1997 to June 1999. The TSC Coordinator chaired the sixth United Nations TRAIN-X Network Round Table held in Geneva on 14 and 15 June 1999. The

CC:TRAIN/UNITAR representative will be the Chairperson until the end of the seventh Round Table in 2001. Sister training programmes in the network collaborate with one another. Over the past year, one certified TRAIN-X instructor from TRAINAIR/Brazil delivered an instructor's course at TSC/Brazil. This facilitated the provision of instruction, within the same country, by a sister programme, as well as the creation of very important inter-programme linkages at the local level. Additionally, the TRAINMAR Central Support Unit in UNCTAD provided a TRAINMAR pedagogic expert from Malaysia who validated a TSC course in Thailand; thus TSC benefited by having an expert from the region and from a sister programme assisting a TSC Course Development Unit.

601. Collaboration with other organizations within and outside in the United Nations system included provision of continuous support to the United Nations University Database on Training and the provision of advice to UNDP in the field of integrated marine and coastal area management. The International Center for Living Aquatic Resources (ICLARM) invited the TSC programme to design and implement a training strategy for the International Coral Reef Action Network (ICRAN). For this purpose, the TSC Central Support Unit is actively involved in drafting a proposal within the framework of the TSC programme.

602. The TSC programme is recognized by organizations both within and outside the United Nations system as a unique training initiative in the field of integrated marine and coastal area management. The increasing number of enquiries about the programme and the broader outreach that the GEF project has provided have necessitated the preparation of information materials readily accessible to the public at large and to the potential trainees in particular. Various initiatives have been developed for enhancing the profile of the programme. The TSC Web site (http://www.un.org/Depts/los/TSC) has been updated and new features have been added, making it interactive and providing for linkages with all TSC Course Development Units and associated GEF projects. A discussion panel entitled "Training and Capacity-Building in Coastal and Ocean Management" was organized as a side event during the seventh session of the Commission on Sustainable Development in April 1999, with presentations by several representatives from countries having TSC CDUs. Moreover, the TSC Central Support Unit made a number of presentations geared to, *inter alia*, GEF project coordinators and staff from organizations both within and outside the common system. Papers describing the TSC programme have also been prepared for publication in several technical journals.

603. Within the United Nations system, UNDP provides financial and technical support for training for better management of coastal and ocean resources in many countries. (The Division's TSC programme is also a beneficiary of UNDP's financial and technical support.) It assists national scientific institutions in establishing laboratories that monitor threats to the marine environment. In response to a recent surge in interest on the part of many countries in ocean resource preservation, UNDP is investing its own resources and those of the Global Environment Facility in activities (primarily through the Division's TSC programme) aimed at protecting or rehabilitating endangered or degraded marine ecosystems in the Gulf of Guinea, the Caribbean, the East Asian Seas, the Black Sea, the Red Sea, the South Atlantic Ocean and the South Pacific Ocean.

B. Information dissemination

604. Global coverage information is collected, processed and disseminated by all the organizations of the United Nations system in their respective areas of competence in the field of oceans and the law of the sea. Almost all of them have advanced and elaborate Web sites which are valuable sources of information for the use of Member States, intergovernmental bodies, non-governmental organizations, the private sector and civil society at large.

605. For overall developments in ocean affairs and the law of the sea, the library and reference collection and the information system of the Division for Ocean Affairs and the Law of the Sea have been appreciated by users, especially decision makers and managers. The Division has reformulated its information activities, with an emphasis on the Web site, with a view to strengthening its existing system for the collection, compilation and dissemination of information on the law of the sea and related matters, aimed at promoting a better understanding of UNCLOS, its uniform and consistent application and its effective implementation. The Division's Web site on "Oceans and law of the sea" (http://www.un.org/Depts/los) not only allows for the collection of materials (documents, reports, legislation, etc.) from a wide variety of sources (Governments, international organizations and competent institutions) in a cost-effective manner, but also provides users with convenient means for obtaining timely, well-organized and cross-referenced materials and information dealing with various aspects of ocean affairs and the law of the sea.

606. The recently expanded Web site is intended to be a gateway for the education of the general public about UNCLOS. The Convention, recognized as the framework

for all ocean-related activities, serves as a point of reference in explaining how its provisions deal with issues that directly affect people's lives. The site does not attempt to cover all issues, but rather serves as a central hub for those interested in further, more detailed research on specific interrelated ocean issues. The site contains more than 1,500 additional links to governmental, non-governmental and academic sites as well as those maintained by international organizations of the United Nations system. The expanded site is also designed for easy access in all countries, even those with less sophisticated Internet connections.

607. The Web site provides general information on oceans and the law of the sea as well as many documents, including the full texts of UNCLOS, the 1994 Agreement relating to the implementation of Part XI of UNCLOS and the 1995 Agreement on Fish Stocks, along with information on their current status and declarations made at the time of signature, ratification or accession. Information is also available on the new ocean institutions established by the Convention: the International Seabed Authority, the International Tribunal for the Law of the Sea and the Commission on the Limits of the Continental Shelf. Users have access to many other selected documents and press releases, including reports to the General Assembly and verbatim records of General Assembly deliberations on the law of the sea and ocean affairs, as well as documents of the Meeting of States Parties and the Commission on the Limits of the Continental Shelf.

608. In its resolutions 49/28 and 52/26 the General Assembly called for the development, in cooperation with the relevant international organizations, of a centralized system for providing coordinated information and advice on ocean affairs and the law of the sea. To this end, the Division is developing the Web site as a single, comprehensive source for diverse and issue-specific information. This includes over 380 carefully researched hyperlinks to specialized agencies and international organizations where correct and authentic texts of international instruments relating to oceans, as well as other ocean-related information, can be found.

609. Two additional areas of information continue to be developed by the Division: the Geographical Information System (GIS) database for the cartographic component of the limits of maritime zones (see para. 91) and the database on national maritime legislation (see A/52/487, para. 405).

XII. International cooperation and coordination

610. The very natural characteristics of the oceans and the impossibility of limiting the resources, uses and physical processes of the oceans within specified, politically and legally defined "boundaries" led to the fundamental principle enshrined in UNCLOS that the problems of ocean space are closely interrelated and need to be considered as a whole. The corollary of this principle is that there has to be cooperation and coordination in people's interaction with the oceans. Now that the legal order for the world's oceans and seas, built upon the interrelatedness of ocean affairs, has been established by UNCLOS, cooperation and coordination, already possessed of a physical basis, have been given a legal basis as well.

611. In the field of ocean affairs and the law of the sea, formal as well as informal cooperation is quite extensive among the organizations of the United Nations system, in many cases extending to other intergovernmental bodies, governmental agencies, the private sector, non-governmental organizations and stakeholders, in the widest sense. To give an idea of its scope, coverage and content, a sample of the most important cooperative programmes is presented below.

A. Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)

612. Constituted in 1968 under an inter-agency Memorandum of Understanding, GESAMP is an expert scientific advisory body supported by the organizations of the United Nations system. As of August 1999, the sponsoring organizations were: the United Nations, through its Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs; UNEP; UNESCO/IOC; FAO; WHO; WMO; IMO; and IAEA. Each GESAMP sponsoring agency provides a technical secretary and supports the participation of experts in connection with GESAMP meetings (plenary and working groups). IMO also provides the Administrative Secretary for GESAMP in addition to a technical secretary. GESAMP's principal task is to provide independent, multidisciplinary scientific advice to the sponsoring agencies concerning the prevention, reduction and control of the degradation of the marine environment. The annual reports of GESAMP and the reports of its working groups thus represent substantial contributions to the technical work of the sponsoring agencies under their respective mandates and programmes of work, including in relation to the

implementation of UNCLOS and chapter 17, among others, of Agenda 21 and, through the agencies, to their governing bodies and members.

613. At its twenty-ninth session, held at IMO headquarters, London, in August 1999, GESAMP adjusted its terms of reference,[118] in response to Commission on Sustainable Development decision 7/1, paragraph 32 (a), in which the Commission welcomed "the intention of IMO, working in partnership with other sponsoring organizations, to improve the effectiveness and inclusiveness of the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)" and recommended "exploring the possibility of establishing a means for GESAMP to interact with scientific representatives of Governments and major groups". The draft revised terms of reference, which ultimately must be approved and signed by the heads of the sponsoring agencies, appear to address comprehensively the requirements for enhanced effectiveness. At the same session, GESAMP also reviewed the work of several of its working groups, including those dealing with: evaluation of the hazards of harmful substances carried by ships; estimates of oil entering the marine environment from sea-based activities; environmental impacts of coastal aquaculture; and marine environmental assessments. Regarding the latter, the Marine Environmental Assessments Working Group met following the GESAMP plenary meeting in order to advance its work on two reports for submission to GESAMP at its thirtieth session (May 2000): "Biennial report on the state of the marine environment: current major issues and emerging problems", and "Land-based sources and activities affecting the quality and uses of the marine coastal and freshwater environment".

B. Global Ocean Observing System (GOOS)[119]

614. The Global Ocean Observing System (GOOS) was created in response to the need, also emphasized by Agenda 21, for an integrated and comprehensive global ocean observing and information system to provide the information needed for oceanic and atmospheric forecasting, for ocean and coastal zone management by coastal nations, and for global environmental change research. GOOS is an operational system planned, established and coordinated by the Intergovernmental Oceanographic Commission (IOC) of UNESCO, together with WMO, UNEP, and the International Council for Science (ICSU).

615. GOOS is designed to provide descriptions in real time of the current state of the sea and its contents, and forecasts of these for as far ahead as possible, for a wide range of users, and to meet the needs of the United Nations Framework Convention on Climate Change by underpinning forecasts of changes in climate. It is not merely operational, but includes work to convert research understanding into operational tools. GOOS is already beginning to provide IOC and its partners (WMO, UNEP and ICSU) with the ability to convert research results into useful products to meet societal needs.

616. A major achievement during 1998 was the creation of the GOOS Initial Observing System (GOOS-IOS), which unites the existing global ocean-observing sub-systems supported by IOC and WMO and includes measurements from voluntary ships, buoys, coastal stations including tide gauges, and satellites, as well as data centres and means of communication. Further development of this system, which was expanded in 1999, was to be facilitated by the creation in July 1999 of a new Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), which merges previous bodies dealing with oceanography and marine meteorology (see also para. 622).

617. The implementation of GOOS depends ultimately on nations working individually or in groups. At present there are two main regional GOOS programmes: EuroGOOS in Europe, and NEARGOOS in the North-East Asian region. Highlights for EuroGOOS include the attraction of ecu 15 million from the European Commission into pre-operational research projects to develop the skills and capabilities to implement GOOS; one of these projects is the Mediterranean Forecasting Project. Highlights for NEARGOOS include a doubling of its data holdings, a significant increase in contributors and a significant increase in data exchange. New regional GOOS programmes with a coastal focus include MedGOOS, PacificGOOS, Black-Sea-GOOS, and CaribbeanGOOS. A GOOS-Africa Committee is helping to develop GOOS in African coastal seas.

618. GOOS is part of an Integrated Global Observing Strategy (IGOS) developed by the United Nations sponsors of global observing systems, along with ICSU and the Committee on Earth Observation Satellites (CEOS). IGOS involves the major space-based and *in situ* systems for global observations of the Earth, including in particular the climate and atmosphere, oceans, land surface and Earth interior, in an integrated framework. It aims to enable better observations to be derived in a more cost-effective and more timely fashion. It builds on the strategies of existing international global observing programmes and on current achievements, with additional integrated efforts being directed on those areas where satisfactory international arrangements and structures do not currently exist. It should

improve Governments' understanding of global observing plans; provide a framework for decisions on the continuity of observation of key variables; reduce duplication; help to improve resource allocation; and assist in the transition from research to operations. It is consistent with the drive towards increasing efficiency and effectiveness within the United Nations system.

619. *HOTO module of GOOS.* While environmental managers are faced with the task of evaluating the extent of contamination and the degree of ecological damage in coastal regions, their efforts in developing countries may be severely handicapped by the lack of resources for conducting fieldwork and performing state-of-the-art chemical and biological assays. The need for methods for rapid assessment of marine pollution led the joint IOC/UNEP/IMO Global Investigation of Pollution of the Marine Environment (GIPME) programme to develop the GOOS Health of the Ocean (HOTO) module, specifically addressing the ways and means of developing integrated mechanisms for observing, assessing and forecasting the effects of anthropogenic activities on the marine environment.

620. GIPME took its first specific action in response to the plan for the HOTO module of GOOS by implementing "Rapid Assessment of Marine Pollution (RAMP): a HOTO Pilot Project in South America". The project aims to test and provide easy-to-use, inexpensive chemical and biological markers that can be used to assist and improve environmental management in developing countries. The techniques being devised will provide rapid, cost-effective screening alternatives to more complex procedures currently used in Europe and the United States. Based on the early success of the work, plans are being developed to perform RAMP programmes in the Caribbean region in late 1999 and in Viet Nam in the near future.

C. Climate Variability and Predictability programme (CLIVAR)[120]

621. Observations and research on climate, including the interrelationships of oceans and climate, are carried out in the United Nations system under the World Climate Research Programme (WCRP), co-sponsored by IOC, WMO and ICSU. Two activities being executed are the World Ocean Circulation Experiment (WOCE) and the Tropical Ocean Global Atmosphere (TOGA) programmes. Experience with WOCE and TOGA has clearly demonstrated that an ocean observing system is the key to improved understanding of the mechanisms at play in the Earth's climate system and that this understanding promises to provide a firm scientific basis on which economic and societal decisions can be made. With the realization of this promise as the focus, WCRP launched its latest and most ambitious programme ever on climate variability and predictability (CLIVAR) in December 1998 with an International CLIVAR Conference in Paris that attracted representatives from 63 nations. The Conference statement called upon nations to make available the new resources required for conducting CLIVAR, and specifically called for the implementation of long-term, systematic climate observations, both space-based and *in situ*, such as the Global Climate Observing System, Global Ocean Observing System and Global Terrestrial Observing System (GCOS/GOOS/GTOS).

D. Joint Technical Commission for Oceanography and Meteorology (JCOMM)

622. WMO reported that, in response to the clear need to enhance integrated observation of the Earth's atmosphere and oceans, both the WMO Congress at its thirteenth session (Geneva, May 1999) and the Assembly of IOC/UNESCO at its twentieth session (Paris, June/July 1999) approved the establishment of a new Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM). JCOMM is an intergovernmental body of experts which, as a constituent body of WMO and IOC, will coordinate and regulate the provision of meteorological and oceanographic services worldwide and also coordinate and guide an operational ocean-observing system to support those services as well as global climate monitoring, research and prediction, including El Niño/La Niña prediction. This is consistent with the identified priority reflected in decision 14/CP.4, "Research and systematic observation", adopted by the Conference of the Parties to the United Nations Framework Convention on Climate Change at its fourth session (Buenos Aires, September 1998). JCOMM is expected to eventually develop a worldwide system for ocean monitoring and forecasting similar to the one in place for many years for atmospheric monitoring. The Commission represents a new paradigm in inter-agency cooperation in the United Nations system, in which two agencies are pooling resources and expertise in support of a more efficient, multidisciplinary approach to addressing an identified global requirement. It is expected to lead to enhanced efficiency and cost-effectiveness at the intergovernmental institutions dealing with meteorology and oceanography.

E. Aquatic Sciences and Fisheries Abstracts (ASFA)

623. The Aquatic Sciences and Fisheries Abstracts (ASFA) is a United Nations inter-agency and international bibliographical information service initiated in 1970. Now the world's most comprehensive database within its broad scope of coverage, ASFA's objective is to disseminate information to the world community on the science, economics, technology, law, policy and management of the marine and freshwater environments (including both living and non-living resources).

624. The United Nations, through its Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, and FAO, IOC/UNESCO and UNEP are United Nations system co-sponsoring partners of ASFA, joined by 4 international partners, 27 national partners and the publisher of ASFA, Cambridge Scientific Abstracts (CSA).[121] FAO provides the secretariat for ASFA. Each partner monitors journals, publications and documents within its respective areas of coverage, from which abstracts and bibliographical data are prepared for inclusion in the ASFA computer-searchable database and CD-ROM and the corresponding ASFA monthly journals, namely: *ASFA 1 — Biological Sciences and Living Resources; ASFA 2 — Ocean Technology, Policy and Non-Living Resources; ASFA 3 — Aquatic Pollution and Environmental Quality*. In addition to the print journals and CD-ROM, ASFA is available on the Internet Database Service (IDS), magnetic tape and on-line services.

625. The annual ASFA Advisory Board meeting addresses policy and technical issues related to enhancing the effectiveness of ASFA products and their usefulness to an expanding user community. The 25-28 May 1999 meeting, hosted by the National Oceanic and Atmospheric Administration, in Bethesda, Maryland, United States, and attended by 26 participants from 14 national partners, 2 international partners, 3 co-sponsoring partners (United Nations, IOC and FAO), and the publisher, dealt with a number of priority issues, among them: expansion of the partnership as part of a wider effort to broaden the substantive and geographical coverage of the relevant literature and to expand the dissemination and use of ASFA products, the scope, timeliness and quality of ASFA products; and the use for ASFA-related purposes (e.g., training) of the ASFA Trust Fund, which is based on royalties derived from the sale of ASFA products. Four new members — Bulgaria, Italy, Morocco and Spain — were welcomed into the partnership in 1999.

626. In the context of increasing the distribution of ASFA products to developing countries, the Advisory Board expressed its continuing support for the 1998 FAO/CSA initiative to supply free of charge for a limited time ASFA CD-ROMs to institutes in the low-income food-deficit countries of Africa. As of June 1999, 18 institutes in a position to use the ASFA CD-ROM had been identified and contacts with those institutes that had not yet responded to an FAO first letter and questionnaire were being pursued.

F. Subcommittee on Oceans and Coastal Areas of the Administrative Committee on Coordination

627. Responding to the need for coordination in the field of marine affairs, in particular, as emphasized in chapter 17 of Agenda 21, within a year of the 1992 United Nations Conference on Environment and Development, the Administrative Committee on Coordination (ACC), acting on a proposal from the newly created Inter-Agency Committee on Sustainable Development, established the Subcommittee on Oceans and Coastal Areas.

628. The Subcommittee held its seventh session in Monaco from 8 to 12 February 1999 at the invitation of IAEA and with the participation of representatives from the United Nations Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, and Division for Sustainable Development, Department of Economic and Social Affairs; UNEP and UNDP; FAO, IMO, IOC/UNESCO, WMO, UNIDO and IAEA. Among other matters, it reviewed the implementation planning for the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, the status of preparations for the United Nations Atlas of the Oceans and inter-agency cooperation and coordination and reporting to the Commission on Sustainable Development. Under the latter item, the Subcommittee took note of the report of the Secretary-General on oceans and seas (E/CN.17/1999/4 and Add.1) prepared by the Department of Economic and Social Affairs for the seventh session of the Commission and had an in-depth discussion on ways and means for effective cooperation and coordination among the agencies and organizations represented in the Subcommittee. This included discussion of a number of joint initiatives that in the Subcommittee's view were satisfactorily developing, for example, the Global Ocean Observing System (GOOS) and the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). Integrated Coastal Area Management (ICAM) was identified as one

programme area in which effective inter-agency cooperation was most needed. (The report of the Subcommittee is contained in ACC/1999/8.)

629. At an informal session at IMO headquarters, London, from 16 to 18 August 1999, the primary concern of the Subcommittee was follow-up to Commission on Sustainable Development decision 7/1. In paragraph 38 (c) of the decision, the Commission had invited the Secretary-General, "working in cooperation with the executive heads of relevant organizations of the United Nations system, to undertake measures aimed at improving the effectiveness of the work of the ACC Subcommittee on Oceans and Coastal Areas, including through making the work of the Subcommittee more transparent and responsive to member States, for example by organizing regular briefings on Subcommittee activities".

630. Responding to the concern reflected in that request, the Subcommittee at its informal session agreed on several initial measures to make it more "transparent and responsive to member States", namely: Subcommittee members would provide regular annual briefings to delegations and interested observers during every session of the Commission on Sustainable Development (not just when oceans are discussed, as has been past practice), subject to the financial and time constraints on travel to United Nations Headquarters; each member would explore the feasibility of conducting briefings on the work of the Subcommittee for Governments and agency representatives and non-governmental organizations during regular sessions of the respective governing bodies; the Subcommittee would develop its own Web site linked to that of ACC and relevant organizations, as well as the United Nations Atlas of the Oceans Web page; and a Subcommittee brochure would also be produced, which would be made available at briefings. These proposed measures were reported to the Inter-Agency Committee at its fourteenth meeting (9-10 September 1999).

XIII. Review of the sectoral theme of "oceans and seas" by the Commission on Sustainable Development in 1999

631. As pointed out in chapter 17 of Agenda 21, "International law, as reflected in the provisions of the United Nations Convention on the Law of the Sea ... sets forth rights and obligations of States and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources."[122] As reiterated by the Commission on Sustainable Development, "Chapter 17 of Agenda 21 remains the fundamental programme of action for achieving sustainable development in respect to oceans and seas" (CSD decision 7/1, para 1(b)).

632. In this context, one of the most significant developments in 1999 in relation to the development and management of marine resources and the protection and preservation of the marine environment was the review by the Commission on Sustainable Development, under the sectoral theme of "oceans and seas", of progress achieved in the implementation of chapter 17 and other relevant chapters of Agenda 21. Pursuant to a decision of the General Assembly, the review was carried out by the Commission at its seventh session, held in New York from 19 to 30 April 1999. In the preparation of the review, the Commission was assisted by a working group established by it, the Inter-Sessional Ad Hoc Working Group on Oceans and Seas and on the Sustainable Development of Small Island Developing States, which met in New York from 1 to 5 March 1999. Preparations also took place at the regional level. For example, ECLAC reported that a regional seminar had been held at Santiago from 30 November to 3 December 1998 "so as to prepare a technical contribution to the seventh session of the Commission on Sustainable Development" (see ECLAC document LC/R.1899). Pursuant to the above-mentioned decision of the General Assembly, the results of the review, contained in decision 7/1 of the Commission and endorsed by the Economic and Social Council, will be considered by the Assembly under the regular agenda item "Oceans and the law of the sea".

633. The salient points of the results of the review by the Commission are highlighted below, the recommendations on specific topics having been emphasized in the present report under respective subject headings, especially the areas of particular concern identified by the Commission, e.g., marine resources, land-based activities, marine science and other marine activities. The Commission emphasized the importance of international cooperation, within the framework of UNCLOS and Agenda 21, in ensuring that the oceans and seas remain sustainable through integrated management, and that while respecting the sovereignty, jurisdiction and sovereign rights of coastal States and recalling their rights and obligations in relation to the protection of the marine environment, all States can benefit from the sustainable use of the oceans and seas. The Commission further emphasized the threats to these objectives from overexploitation of marine living resources, including through illegal, unregulated or unreported (IUU) fishing and unsustainable or uncontrolled distant water

fishing, and from pollution. In this context, the Commission recommended that particular priority be given to:

(a) The conservation, integrated and sustainable management and sustainable use of marine living resources, including the ecosystems of which they are a part;

(b) The prevention of pollution and degradation of the marine environment from land-based and other activities;

(c) Better scientific understanding of the oceans and seas and their resources, of the effects of pollution, and of the interaction of the oceans and seas with the world climate system;

(d) Encouraging, at the national, regional and global levels, the steps necessary for an effective and coordinated implementation of the provisions of UNCLOS and Agenda 21.

634. The Commission emphasized the need for capacity-building for action at the national level. In support of national action to implement the provisions of chapter 17 of Agenda 21, the Commission invited the United Nations system and Governments, both in their bilateral relationships and in the multilateral development and financial organizations in which they participate, to review their programmes to ensure that priority is given to initiate or further develop, within the context of national plans, programmes for building capacities.

635. The Commission emphasized the importance of cooperation, at the regional level, as appropriate, within the relevant legal framework for the conservation and integrated and sustainable management and use of regional seas. In this context, the Commission supported the need to strengthen the United Nations Environment Programme (UNEP) regional seas programme and to enhance cooperation with other regional seas and intergovernmental organizations in order to permit the sharing of experience.

636. With respect to international agreements, in order to achieve the goal of universal participation, the Commission recommended that all States that have not done so consider becoming parties to UNCLOS and the 1994 Agreement relating to the implementation of Part XI of UNCLOS. The Commission noted that although significant progress has been made in developing global and regional agreements and programmes of action related to the conservation and sustainable use of the oceans and seas, much more needs to be done to effectively implement those agreements and programmes. To promote this, the Commission invited relevant intergovernmental bodies to review, in accordance with their respective mandates, the status of international agreements and programmes of action in their areas of work, as well as obstacles to more effective implementation, and to propose possible actions that could be taken to promote wider acceptance and implementation.

637. The Commission highlighted the needs for international coordination and cooperation. The Commission urged relevant institutions, whether national, regional or global, to enhance collaboration with each other, with a view to promoting coordinated approaches, avoiding duplication of effort, enhancing effective functioning of existing organizations and ensuring better access to information and broadening its dissemination. The Commission also noted that oceans and seas present a special case as regards the need for international coordination and cooperation, and therefore recommended that, a more integrated approach be taken with regard to all legal, economic, social and environmental aspects of the oceans and seas, at both intergovernmental and inter-agency levels. To achieve this goal, the Commission invited the Secretary-General: (a) to undertake measures aimed at ensuring more effective collaboration between relevant parts of the Secretariat; (b) to complement his annual reports to the General Assembly with suggestions on initiatives regarding improved coordination and better integration; and (c) to work in cooperation with the executive heads of relevant organizations of the United Nations system in undertaking measures aimed at improving the effectiveness of the Subcommittee on Oceans and Coastal Areas of the Administrative Committee on Coordination. The Commission also recommended that the General Assembly consider ways and means of enhancing the effectiveness of its annual debate on oceans and the law of the sea.

Notes

[1] Commission on Sustainable Development decision 7/1, "Ocean and seas" (hereinafter referred to as CSD decision 7/1), para. 1 (a); *Official Records of the Economic and Social Council, 1999, Supplement No. 9* (E/1999/29), chap. I.C, decision 7/1, para. 1 (a).

[2] These States and entities are: Algeria, Angola, Antigua and Barbuda, Argentina, Australia, Austria, Bahamas, Bahrain, Barbados, Belgium, Belize, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Cameroon, Cape Verde, Chile, China, Comoros, Cook Islands, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Democratic Republic of the Congo, Djibouti, Dominica, Egypt, Equatorial Guinea, *European Community*, Fiji, Finland, France, Gabon, Gambia,

Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Iceland, India, Indonesia, Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kenya, Kuwait, Lao People's Democratic Republic, Lebanon, Malaysia, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Monaco, Mongolia, Mozambique, Myanmar, Namibia, Nauru, Nepal, Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, Sudan, Suriname, Sweden, the former Yugoslav Republic of Macedonia, Togo, Tonga, Trinidad and Tobago, Tunisia, Uganda, Ukraine, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, Uruguay, Vanuatu, Viet Nam, Yemen, Yugoslavia, Zambia and Zimbabwe.

Further details regarding States parties are provided at the Web site of the Division at www.un.org/Depts/los/UNCLOS-status.htm.

[3] *The Law of the Sea: Declarations and Statements with respect to the United Nations Convention on the Law of the Sea and to the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea* (United Nations publication, Sales No. E.97.V.3).

[4] These States are: Bahamas, Canada, Cook Islands, Fiji, Iceland, Iran (Islamic Republic of), Maldives, Mauritius, Micronesia (Federated States of), Monaco, Namibia, Nauru, Norway, Papua New Guinea, Russian Federation, Saint Lucia, Samoa, Senegal, Seychelles, Solomon Islands, Sri Lanka, Tonga, United States of America and Uruguay.

[5] Excerpted from the contribution of the International Seabed Authority.

[6] These States are: Bahamas, Brazil, Chile, Côte d'Ivoire, Finland, Ghana, Greece, Indonesia, Jamaica, Kenya, Namibia, Netherlands, Oman, Pakistan, Senegal, Slovakia, Spain, Sudan, the Former Yugoslav Republic of Macedonia, Trinidad and Tobago, United Kingdom of Great Britain and Northern Ireland and Uruguay.

[7] See A/53/456, para. 53.

[8] *Idem*, para. 54.

[9] For more details about the M/V "Saiga" (No. 2) case, see the Web site of the Division for Ocean Affairs and the Law of the Sea for the daily summaries and the judgment of the Tribunal, at <www.un.org/Depts/los/ITLOS>. See also paras. 574-580 of the present report for a summary of the judgment.

[10] For a discussion on the item, see SPLOS/44; see also SPLOS/48, paras. 18-19.

[11] These States are: Argentina, Australia, Belgium, Croatia, Finland, Ghana, Germany, Greece, Jordan, Kuwait, Lebanon, Netherlands, Norway, Oman, Portugal, Senegal, Slovakia, Sri Lanka, Tunisia, United Kingdom and United Republic of Tanzania.

[12] Table 19 in UNCTAD Review of Maritime Transport 1998 shows the true nationality of the major open-registry fleets, as of 31 December 1997.

[13] At the time of the adoption, the Maritime Environment Protection Committee determined that the amendments shall be deemed to have been accepted on the date six months after the conditions for the entry into force of both the 1988 SOLAS Protocol and the 1988 Load Lines Protocol had been met.

[14] IAEA reported that, as of 6 September 1999, 39 States had signed the Joint Convention and 13 States had ratified/acceded to it. The Convention will enter into force on the ninetieth day after the twenty-fifth instrument of ratification is deposited with IAEA, including the instruments of 15 States that each have an operational nuclear power plant.

[15] The mandatory system was adopted by the Maritime Safety Committee at its 70th session (see resolution MSC.85 (70), annex 16 of MSC 70/23/Add.2) and entered into force on 1 July 1999.

[16] MSC 71/23.

[17] MSC 71/10, annex 3.

[18] Memorandum of Understanding on Port State Control in the Asia-Pacific Region, annual report: http://iijnet.or.jp/tokyomou/.

[19] http://www.parismou.org/Whatsnew/199905191.html.

[20] Press release of 29 April 1999, Seventh meeting of the Port State Control Committee in the Asia-Pacific region.

[21] Memorandum of Understanding on Port State Control in the Asia-Pacific region and in other regions: http://www.iijnet.or.jp/tokyomou/ar-1-7.html.

[22] Ibid.

[23] Ibid.

[24] Ibid.

[25] A comprehensive approach to regional security was adopted in the proposed Guidelines for Regional Maritime Cooperation developed by the Maritime Cooperation Working Group of the Council for Security Cooperation in Asia/Pacific at its fifth meeting, November 1998, for consideration by the ASEAN Regional Forum (ARF).

[26] See summary proceedings of the Workshop co-organized by the United Nations Interregional Crime and Justice Research Institute, the Commonwealth Secretariat and the South Pacific Regional Environment Programme, on the Web site of the Institute, at www.unicri.it.

[27] Introduction to the draft United Nations International Drug Control Programme (UNDCP) Maritime Drug Law Enforcement Training Guide.

[28] See para. 17.1 of the *Commentary on the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988* (United Nations publication, Sales No. E.98.XI.5).

[29] The Division for Ocean Affairs and the Law of the Sea cooperated with UNDCP in the review of the draft guide, and also in the review of the commentary on article 17 for the publication *Commentary on the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988* (see note 28 above).

[30] Extracted from the "Global Programme against Trafficking in Human Beings — an outline for action", prepared by the United Nations Centre for International Crime Prevention, Office for Drug Control and Crime Prevention, and the United Nations Interregional Crime and Justice Research Institute. Text is available on the Web site of the United Nations Crime and Justice Information Network, at http://www.uncjin.org/Special/special.html.

[31] The report was sent to the Division by the International Maritime Bureau.

[32] Information provided by the International Maritime Bureau of the International Chamber of Commerce, see document MSC 71/15/5.

[33] See MSC 71/15/3, p. 25, and MSC 71/23, para. 15.10.

[34] Submission by Denmark and the United Kingdom, document FAL 26/10/3.

[35] Independent World Commission on the Oceans, *The Ocean ... Our Future* (Cambridge, United Kingdom, Cambridge University Press, 1998), p. 102. (The report was also referred to in General Assembly resolution 53/32.

[36] Robert Constanza et al, "The value of the world's ecosystem services and natural capital", *Nature*, vol. 387, No. 6630, 15 May 1997, pp. 253-260. The estimates were referred to in the 1998 report (A/53/456, para. 5).

[37] Wade Roush, "Putting a price tag on nature's bounty", *Science*, 16 May 1997.

[38] FAO Ad Hoc Workshop of the APEC Fisheries Working Group on Fisheries Management, Kensen-numa, Miyagi, Japan, 13-15 July 1999.

[39] Report of the Meeting of FAO and non-FAO Fishery Bodies or Arrangements, Rome, 11-12 February 1999, Food and Agriculture Organization of the United Nations document FIPL/R597, para. 34.

[40] *Illegal, Unregulated and Unreported Fishing*, A proposal to develop a global plan of action to curb illegal, unregulated and unreported fishing, Australia, February 1999 (Presented at the FAO meeting). See also *TAP Newsletter*, March 1999, vol. 8, issue 1: http://www.asoc.org/currentpress/mar1999nwl.htm.

[41] Communication addressed to the Division by ICCAT on 22 June 1999; Conservation and management recommendations and resolutions adopted by ICCAT at its eleventh Special Meeting, Santiago de Compostela, Spain, 16-23 November 1998: resolution by ICCAT concerning the unreported and unregulated catches of tunas by large-scale longline vessels in the Convention area.

[42] Report of the Twenty-third session of GFCM, Rome, 7-10 July 1998 (Rome, FAO, 1998), para. 59 (d).

[43] Annual report of NPAFC, 1998, pp. 23-24.

[44] Report of the Third Session of the IOTC, Mahé, Seychelles, 9-12 December 1998, para. 34; comments of the CCSBT representative, appendix F.

[45] FAO Ad hoc Workshop, see note 38 above.

[46] Informal document distributed under the responsibility of the Japanese delegation, thirteenth session of the FAO Committee on Fisheries, 15-19 February 1999.

[47] *Illegal, Unregulated and Unreported Fishing ...*, see note 40 above.

[48] Report of the seventeenth meeting of CCAMLR, Hobart, Australia, 26 October-6 November 1998, Scientific Committee: "Assessment and avoidance of incidental mortality of Antarctic marine living resources" para. 6.4.

[49] International Conference on Integrated Fisheries Monitoring, Sydney, Australia, 1-5 February 1999. Summary report to COFI.

[50] The State of World Fisheries and Aquaculture, 1998, (Rome, FAO, 1999).

[51] UNCLOS, article 87 (1) (e).

[52] Ibid, article 94 (6).

[53] Report of the twenty-third session of the Committee on Fisheries, FAO Fisheries Report No. 595, FAO 1999, Rome, para. 72.

[54] Report of the Meeting of FAO and Non-FAO Regional Fishery Bodies or Arrangements, Rome, 11-12 February 1999. FAO Fisheries Report No. 597, (FIPL/R597), para. 34, p.6.

[55] Report of the twenty-third session of COFI (see note 53 above), para. 73.

[56] Para. (j) of the Declaration.

[57] Report of the one hundred-and-sixteenth session of the Council, FAO, Rome 1999.

[58] *Official Records of the Economic and Social Council, 1999, Supplement No. 9* (E/1999/29), chap. I.C, decision 17/1, para. 18.

[59] Ibid., para. 35 (a).

[60] International Conference on Integrated Fisheries Monitoring (see note 49 above), paras. 32 and 34.

[61] Report submitted by FAO dated 6 August 1999.

[62] Conservation and Management Recommendations and Resolutions adopted by ICCAT at its Eleventh Special Meeting, Santiago de Compostela, Spain, 16-23 November 1998.

[63] NAFO press release.

[64] NEAFC, Seventeenth Annual Meeting press notice, 24 November 1998: http://www.maff.gov.uk/inf/newsrel/neafc/neafc198.htm; Extraordinary Meeting press notice, NEAFC1/99; <http://www.maff.gov.uk/inf/newsrel/neafc/neafc199.htm>.

[65] 1995 Fish Stocks Agreement, articles 10 (h) and 13 and Part VI.

[66] *Fishing Boat World*, November 1998; Infofish, *Fishing Technology Digest for Asia-Pacific*, Issue No. 25, January-March 1999; http://www.jaring.my/infofish/ftd.htm.

[67] Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean, articles 3 (1), 4 and 7.

[68] Final Report of the third meeting of the Follow-up Committee of the Ministerial Conference on Fisheries Cooperation among African States bordering the Atlantic Ocean, Rabat, 22-25 February 1999.

[69] Information provided by FAO, June 1999.

[70] A Review of Measures Taken by Regional Marine Fishery Bodies to Address Contemporary Fishery Issues, FAO Fisheries Circular No. 940 (FIPL/C940) (FAO, Rome, April 1999), p. 23.

[71] General Fisheries Commission for the Mediterranean, Report of the twenty-third session, Rome, 7-10 July 1998, FAO, Rome, GFCM Report No. 23.

[72] Ibid., paras. 28 and 33.

[73] Report of the Third Session of the Indian Ocean Tuna Commission, Mahé, Seychelles, 9-12 December 1998 (IOTC/S/03/98/R[E]) ISSN: 1020-7341, Victoria, Seychelles, IOTC 1999.

[74] Ibid., appendix L, p. 41.

[75] Ibid., para. 1.

[76] Annual report of NPAFC, Vancouver, Canada, 1999.

[77] Ibid., pp. 25-51.

[78] Draft Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Central and Western Pacific Region (WP.1/Rev.2), 19 February 1999.

[79] Information provided by FAO, June 1999.

[80] Letter dated 3 August 1999 from the Director of IATTC (Ref 0474-700).

[81] Communication dated 24 June 1999 from the Executive Secretary of CCSBT.

[82] ITLOS Press Release, ITLOS/Press 24, 30 July 1999.

[83] Report of the seventeenth meeting of CCAMLR, Hobart, Australia, 26 October-6 November 1998 (CCAMLR-XVII).

[84] See <http://www.asoc.org/campaign/marine.htm>. The non-members were Portugal, Panama and Vanuatu. For a recent case involving Belize, see <http://www.greenpeace.org/~oceans>.

[85] See the Report of CCAMLR, *supra* Note 36, paras. 5.12 and 5.14.

[86] Report of the seventeenth meeting of CCAMLR (note 83 above), paras. 6.19-6.22.

[87] Final press release, 1999 Annual Meeting, St. George, Grenada, 28 May 1999.

[88] Final press release, Eighth Meeting of NAMMCO, Oslo, 1-4 September 1998. http://www.nammco.no/pr8-98.htm.

[89] Report of SBSTTA-4 (UNEP/CBD/SBSTTA/4/14).

[90] Ibid.

[91] *Offshore*, March 1999, vol. 59, No. 3, p. 10.

[92] Ibid., May 1999, vol. 59, No. 5, p. 38.

[93] The following material is primarily based on Michael J. Cruickshank, "Methane hydrate research and development", paper presented at the Workshop on Proposed Technologies for Deep Seabed Mining of Polymetallic Nodules, organized by the International Seabed Authority, Kingston, Jamaica, 3-6 August 1999.

[94] Timothy S. Collett, quoted in Jan Krason, "Industry considers difficulty, cost of pursuing hydrates", *Offshore*, April 1999, vol. 59, No. 4, p. 96.

[95] Ellen Licking, "The world's next power surge?" *Business Week*, 14 December 1998, p. 80.

[96] *Radio New Zealand International*, 6 December 1998, as reported by *BBC News Service*, 8 December 1998.

[97] Elisabeth Mann Borgese, "Background paper", paper presented at the Leadership Seminar on the International Seabed Authority: New Tasks, organized by the International Ocean Institute, Kingston, Jamaica, 13-15 August 1999.

[98] The revised Green Paper was circulated by the delegation of Papua New Guinea at the seventh session of the Commission on Sustainable Development, New York, 19-30 April 1999.

[99] This was recommended by the Meeting of Legal and Technical Experts to Review the 1985 Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African region (the Nairobi Convention) and the Protocol concerning Protected Areas and Wild Fauna and Fauna in the Eastern African Region, held in Mauritius from 15 to 18 December 1998.

[100] The Comité Maritime International began work on its first draft Convention on Offshore Mobile Craft in 1977. A second Convention was adopted in 1994. The IMO Legal Committee has supported the work of CMI, but owing to other pressing matters the draft Conventions were never discussed. The item "Draft convention on offshore mobile craft" has been on the agenda of the Committee since 1995.

[101] These are, respectively, fish waste, or material resulting from industrial fish-processing operations (LC/SG 21/13, annex 2); inert, inorganic geological material (ibid., annex 3); bulky items, primarily comprising iron, steel, etc. (ibid., annex 4); sewage sludge (LC/SG 22/13, annex 3); organic material of natural origin (ibid., annex 4); and platforms or other man-made structures at sea (ibid., annex 5).

[102] Replies received from countries to a ballast water survey conducted by Australia and reported to IMO MEPC at its 34th session, in 1993.

[103] "Oil" is defined in the 1992 Protocol to the CLC Convention as "any persistent hydrocarbon mineral oil such as crude oil, fuel oil, heavy diesel oil and lubricating oil, whether carried on board a ship as cargo or in the bunkers of such a ship".

[104] The 1992 Fund Protocol provides a mechanism for compulsory denunciation of the 1969 and 1971 Conventions when the total quantity of contributing oil received in States which were parties to the 1992 Fund Protocol, or which had deposited instruments of ratification of that Protocol, had reached 750 million metric tons. The conditions for compulsory denunciation were met in November 1996 and took effect on 15 May 1998.

[105] See UNEP/CHW.1/WG.1/9/2. See also documents for the 10th session posted on the Web site of the Basel Convention, at www.unep.ch/basel/basel.right.htm.

[106] Most of the material in this section has been collected from various issues of a number of newspapers, bulletins, and scientific and trade journals, as well as from electronic databases. For specific references, contact the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs.

[107] *Environmental Science & Technology*, 1 February 1999, vol. 33, No. 3, p. 59 A.

[108] Pending final adoption by the General Conference of UNESCO.

[109] See also article 11, "Relations with other organizations", resolution IOC/XX/DR.19, and annex.

[110] IOC formally established ABE-LOS and adopted its terms of reference at the 19th session of its Assembly by Assembly resolution IOC-XIX/19. ABE-LOS is to be composed of two national experts from each State member of IOC (126 States). Only 17 countries have so far nominated experts to ABE-LOS. The Division for Ocean Affairs and the LOS participated in the informal meetings related to the establishment of ABE-LOS and, upon invitation, will also do so in future formal meetings.

[111] United Nations publication, Sales No. E.91.V.3.

[112] ARGO, a pilot project of the international Global Ocean Data Assimilation Experiment programme (GODAE), will use 3,000 profiling floats which will rise from depths of 2000 m to the surface every 14 days. Each float will be collecting 100 conductivity-temperature-depth (CTD) profiles over a four-year period, for a total of 300,000 profiles which together will provide full global coverage of the ocean interior for the first time. The array will provide the subsurface data to complement the surface observations obtainable from satellites for the GODAE experiment and will eventually become part of GOOS.

[113] *Project Oxygen News*, second quarter 1999, issue No. 3.

[114] *Sea Technology*, November 1998, vol. 39, No. 11, p. 64-65.

[115] *Offshore*, June 1999, vol. 59, No. 6, p. 24; *RIA News Agency*, 29 July 1999, as reported by *BBC News Service*, 30 July 1999.

[116] Economic and Social Council document E/1999/20.

[117] Excerpted from the contribution of ICJ.

[118] In 1994, GESAMP revised its terms of reference by expanding the role of the Group to cover all scientific aspects regarding the prevention, reduction and control of the degradation of the marine environment with a view to sustaining its life support systems, resources and amenities. The review was undertaken in the light of the results of the 1992 United Nations Conference on Environment and Development. The name of the Group was changed to its current form.

[119] Excerpted from the contribution of UNESCO/IOC.

[120] Ibid.

[121] International partners include: International Council for the Exploration of the Sea (ICES), International Center for Living Aquatic Resources Management (ICLARM), World Conservation Union (IUCN) and Pacific Islands Marine Resources Information System (PIMRIS). National partners are: Argentina, Australia, Bulgaria, Canada, Chile, China, Cuba, Estonia, France, Germany, Greece, India, Italy, Japan, Kenya, Lithuania, Mexico, Morocco, Norway, Poland, Portugal, Russian Federation, Spain, Sweden, United Kingdom, Ukraine, United States.

[122] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992* (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: *Resolutions adopted by the Conference*, resolution 1, annex II, para. 17.1.